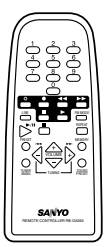
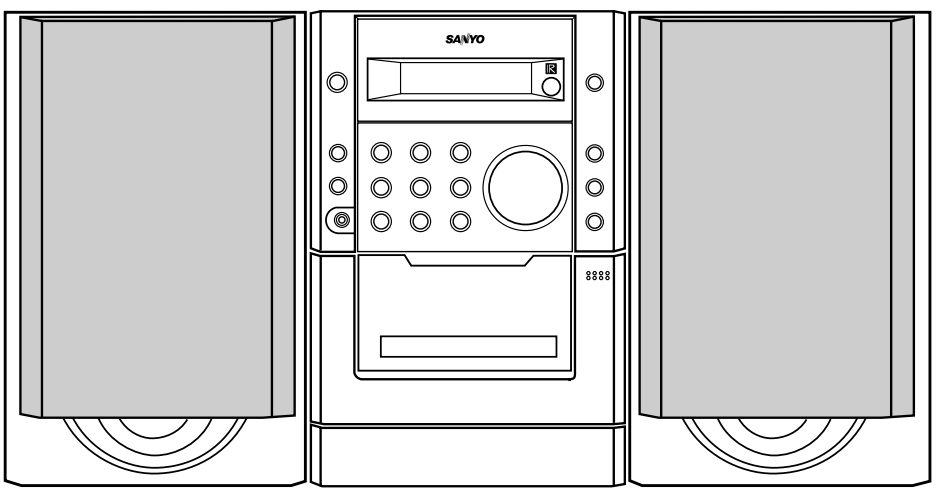
SANYO

INSTRUCTION MANUAL

DC-DA280

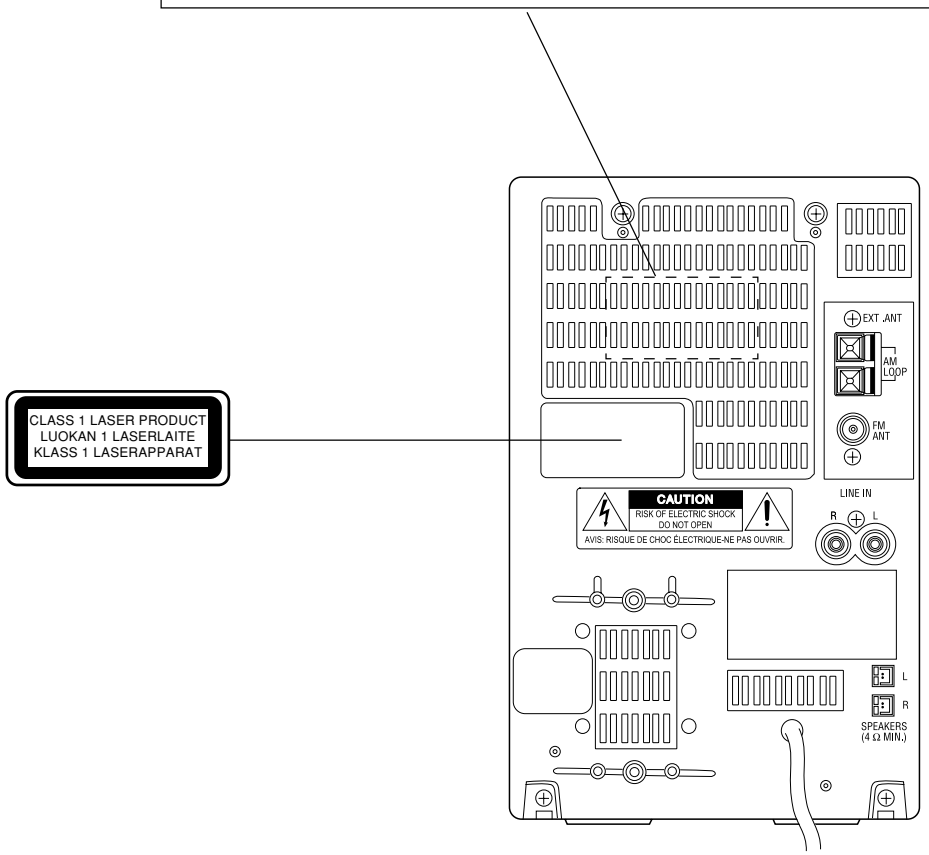
Micro Component System





ENGLISH 4
ESPAÑOL

CAUTION – INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL – USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARNING – OSYNLIG LASER STRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.
VORSICHT – UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.
VARO – AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.



CAUTION – USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OPERATING INSTRUCTIONS MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
THIS PRODUCT SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED PERSONNEL.

PRECAUCION – EL USO DE LOS CONTROLES O AJUSTES, O EL RENDIMIENTO DE PROCEDIMIENTOS NO ESPECIFICADOS EN LAS INSTRUCCIONES DE OPERACION PUEDEN RESULTAR EN EXPOSICION A RADIACION DAÑINA.
ESTE PRODUCTO SOLO DEBE SER REPARADO O AJUSTADO POR PERSONAL DEBIDAMENTE CALIFICADO.

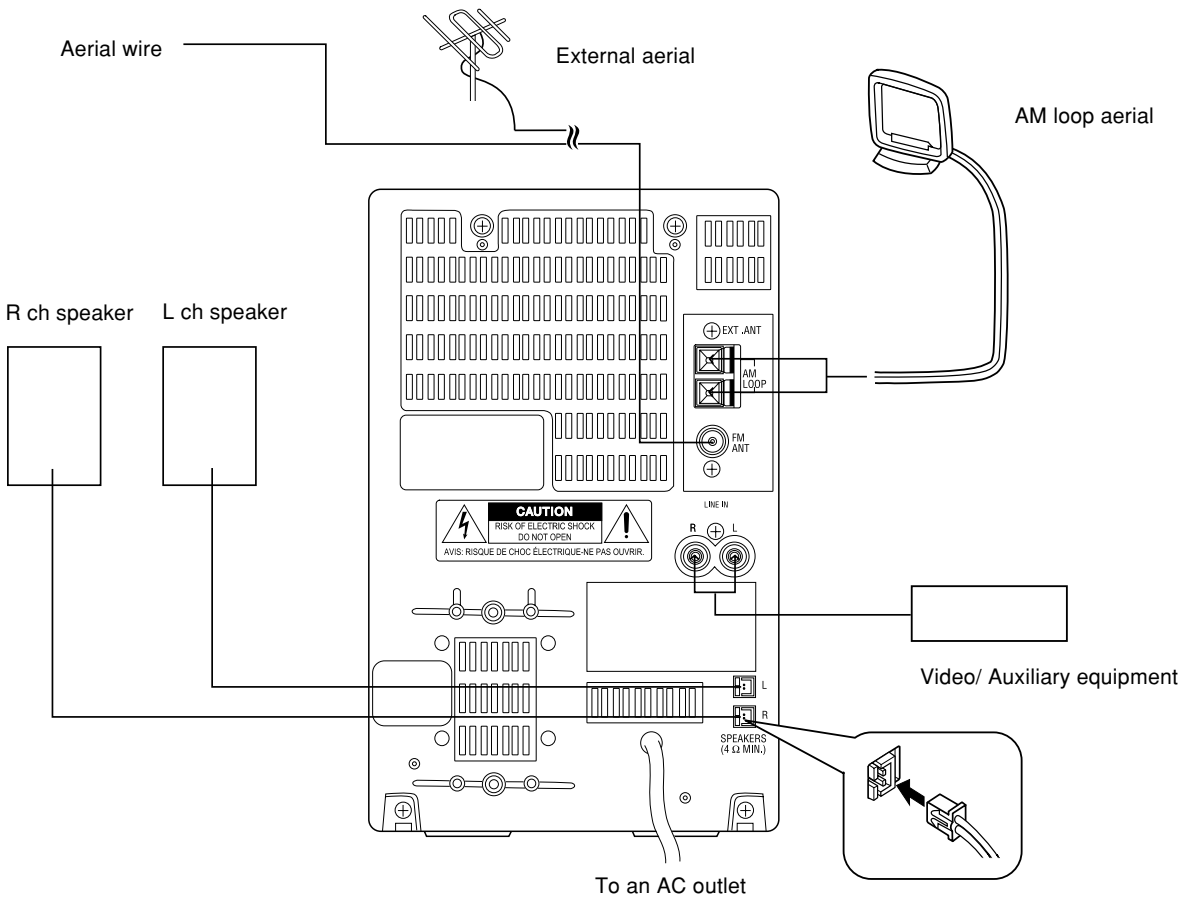
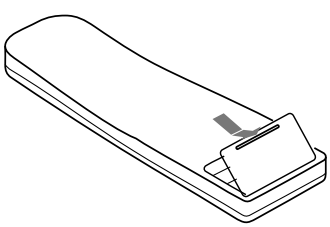


Fig. 1

1



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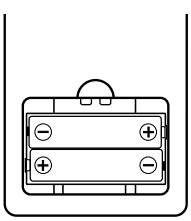


Two R03 batteries
(not supplied)

Fig. 2

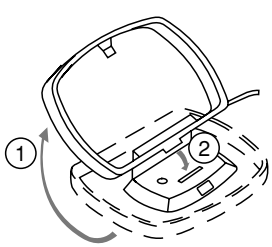
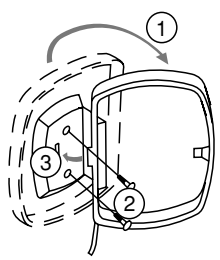


Fig. 3a



Screws (not supplied)

Fig. 3b

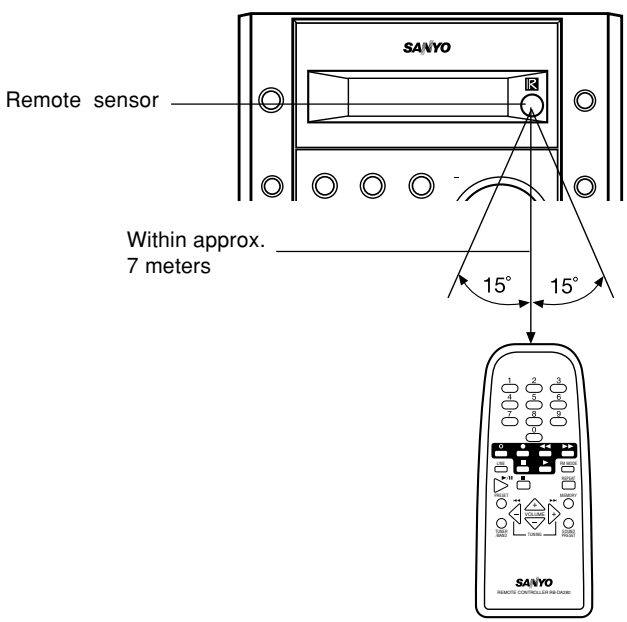


Fig. 4

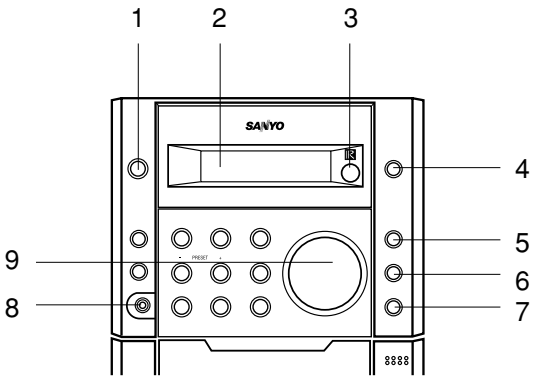


Fig. 5a

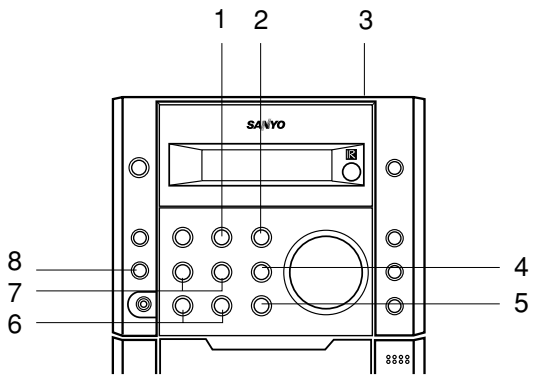


Fig. 5b

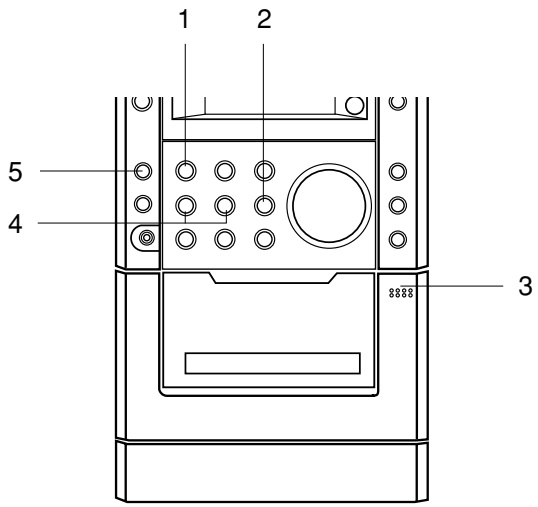


Fig. 5c

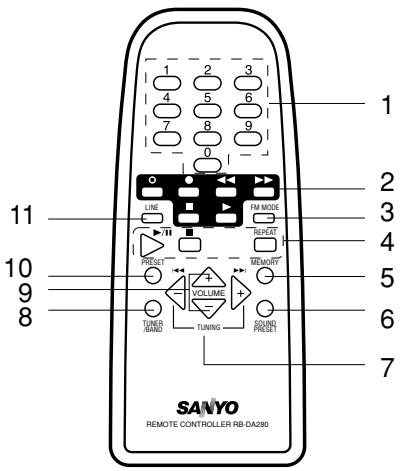


Fig. 5d

COMPACT disc DIGITAL AUDIO

Fig. 6

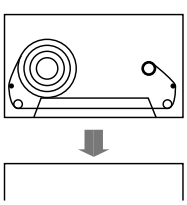


Fig. 7

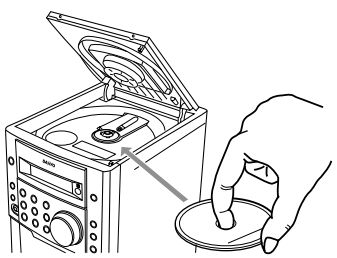
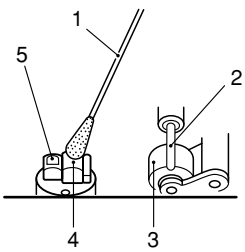
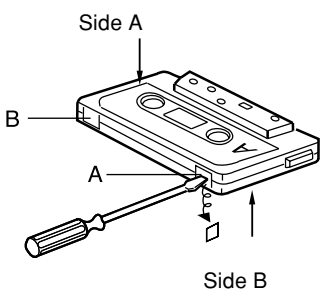


Fig. 8



1. Cotton swab
2. Capstan
3. Pinch roller
4, 5. Head

Fig. 9



Break out tab A for side A.
Break out tab B for side B.

Fig. 10

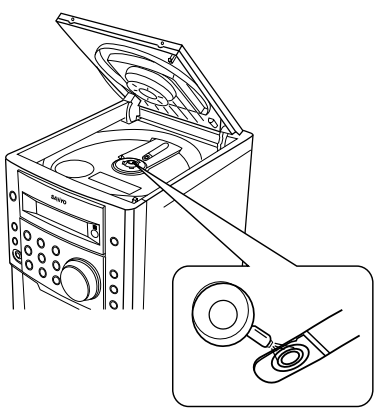


Fig. 11

PRECAUTIONS

- The apparatus shall not be exposed to dripping or splashing.
- Do not use where there are extremes of temperature (below 5°C or exceeding 35°C) or where direct sunlight may strike it.
- Because of the CD player's extremely low noise and wide dynamic range, there might be a tendency to set the volume on the amplifier unnecessarily high. Doing so may produce an excessively large output from the amplifier which could damage your speakers.
- Sudden changes in the ambient temperature may cause condensation to form on the optical lens inside the unit. If this happens, take out the disc, leave the unit for about 1 hour, and then proceed to operate.
- The system's speakers use powerful magnets. Do not place timepieces, credit cards, cassette tapes or video tapes, etc. near the speakers.
- Do not install this equipment in a confined space, such as a book case or built in cabinet.

CONNECTIONS (Fig. 1)

Note:
- Do not connect the mains lead to an AC outlet until all connections have been made.
- The system is not completely disconnected from the mains when the power button is set to the ⏻ OFF position.

Speakers
Connect the connector of the left speaker lead to the "L" SPEAKERS socket and the connector of the right speaker lead to the "R" socket.
If you have difficulty inserting the speaker lead connector, turn it over and reinsert it.

FM aerial
Extend the aerial wire as straight as possible and, while listening to the sound from the system, secure it in a position which yields minimal distortion and noise.

AM Loop aerial
Assemble the loop aerial as shown in Fig. 3a. Unwind the aerial wires, then connect them to the AM LOOP terminals. Place the loop aerial in a position which yields the best AM reception, or attach it to a wall or other surface as shown in Fig. 3b.

Note:
To minimize noise, the speaker, mains and any other leads should not come close to the indoor or external aerial lead and AM loop aerial. Do not place the aerial leads close to the system.

Video/Auxiliary equipment
Connect audio leads (not supplied) from the audio output sockets of a video/auxiliary equipment to the LINE IN sockets.

Headphones
Connect stereo headphones (not supplied) to the PHONES socket for monitoring or for private listening. The speakers are automatically disconnected when headphones are connected.

CONTROLS (Fig. 5)

General (Fig. 5a)
1. Power button (⏻ OFF, ⏽ ON)
2. Display
3. Remote sensor (IR)
4. Function button (FUNCTION)
5. Bass expander button (BASS)
6. Sound preset button (SOUND PRESET)
7. Surround button (SURROUND)
8. Headphones socket (PHONES)
9. Volume control (VOLUME)

CD player/ Tuner (Fig. 5b)
1. Repeat play button (REPEAT)
2. Play/Pause button (CD)
3. CD Compartment lid
4. Stop/Clear button (□)
5. Tuner function/Band select button (TUNER/BAND)
6. Tuning buttons (TUNING -, +)
7. Skip/Search/Preset tuning buttons (PRESET -, +/ ⏮, ⏭)
8. FM mode button (FM MODE)

Cassette deck (Fig. 5c)
1. Play button (TAPE)
2. Stop button (□)
3. Cassette holder
4. Fast forward/ Rewind buttons (PRESET -, +/ ⏮, ⏭)
5. Record/ Record pause button (●/⏸)

REMOTE CONTROLS

Controls (Fig. 5d)
1. Number buttons (1-9, 0)
2. Cassette deck controls
   O: Record muting button
   ●: Record/Record pause button
   ◄◄, ►►: Fast forward/Rewind buttons
   ►: play button
   ■: Stop button
3. FM mode button (FM MODE)
4. CD player controls
   ►/⏸: Play/Pause button
   ■: Stop button
   REPEAT: Repeat button
5. Memory button (MEMORY)
6. Sound preset button (SOUND PRESET)
7. Tuning buttons (TUNING +, -, ⏮, ⏭)
   (These buttons can also be used as CD playing tracks skip and search button)
8. Tuner function/Band select button (TUNER/BAND)
9. Volume buttons (VOLUME +, -)
10. Preset tuning button (PRESET)
11. Line function button (LINE)

Number buttons (1-9, 0)
These buttons are used to select the track numbers on a disc or preset radio stations.
If the function is "CD", the buttons select the track numbers on a disc.
If the function is "TUNER", the buttons select preset radio stations.
With any other function, the buttons will not function.
- Two buttons must always be pressed.
  Example:
  To select No. 3, press 0, then 3.
  To select No. 10, press 1, then 0.
  To select No. 25, press 2, then 5.

Inserting batteries (Fig. 2)

Note:
Always remove batteries if the remote control is not to be used for a month or more. Batteries left in the unit may leak and cause damage.

Remote control range (Fig. 4)

The buttons on the remote control perform similar functions to similarly marked buttons on the front panel.

GENERAL OPERATION

Turning the power on and off

To turn the power on, press the power button and the display lights.
To turn the power off, press the power button again, the display goes out.

Selecting the function

Press the FUNCTION button to select the desired function as follows display shows.

Cd ⟶ TAPE ⟶ TU ⟶ LInE ⟶ Cd ⟶ ...

The function is automatically selected when CD play or type playback is started or when the TUNER/BAND button has been pressed (except during recording).

- When the function selection is changed, CD play or tape playback is automatically stopped.

Adjusting the volume

Turn the VOLUME control, (or press the + or - VOLUME button on the remote control). The volume level appears on the display. (VOL 0 ~ VOL 40)

Surround sound button

Press the SURROUND button, “SURR” appears on the display and a 3 dimensional sound effect is created.

Bass expander button

Press the BASS button to enhance the bass sound.
“BASS” appears on the display.

Selecting the sound mode

Press the SOUND PRESET button to select the sound mode matching the music to be listened to.

POP: Pops, etc.
ROCK: Rock music, etc.
JAZZ: Jazz, etc.
CLASSIC: Classical music, etc.

WHAT TO DO IF ...

If the operation of the unit or display is not normal,

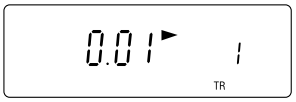
1. Disconnect the mains lead.
2. Press the CD button on the unit for at least 30 seconds.
3. Connect the mains lead.
4. Operate the unit.

CD PLAY

Use compact discs bearing the symbol shown in Fig. 6. In addition to conventional 12 cm CDs, this system can be used to play 8 cm CDs without an adapter.

1. Press the FUNCTION button to select “CD” function.
2. Press the CD compartment lid (⏏ CD OPEN/CLOSE portion). The CD compartment opens.
3. Place the disc with the label facing up on the disc turntable (Fig. 6). (Place only one disc at a time.)
4. Press the CD compartment lid (⏏ CD OPEN/ CLOSE portion) to close it.
   The total number of tracks and total playing time on the disc appear.

   Note:
   If the disc is loaded with the label facing downward, or if a badly scratched disc is loaded, “Cd” appears. If this occurs, load the disc correctly or replace the damaged disc.
5. Press the CD button. Play starts from the first track.



   The current track number and elapsed playing time are displayed.
6. Press the □ button to end disc play.
   When the last track has been played, the player stops automatically.

Note:
Always press the □ button and wait for the disc to stop rotating before opening the CD compartment.

Notes on handling compact discs

- Do not expose the disc to direct sunlight, high humidity or high temperatures for extended periods of time.
- Discs should be returned to their cases after use.
- Do not apply paper or write anything on the disc surface.
- Handle the disc by its edge. Do not touch the playing surface (glossy side).
- Fingerprints and dust should be carefully wiped off the playing surface of the disc with a soft cloth.
  Wipe in a straight motion from the centre to the outside of the disc.
- Never use chemicals such as record cleaning sprays, antistatic sprays or fluids, benzene or thinner to clean compact discs.

To start play from the desired track

Select the track by using the ⏮ or ⏭ button, then press the ⏯ button.

Using the remote control

Press two number buttons within 2 seconds. (Example: press 0, then 3.)

Temporarily stopping play

Press the CD button. “ ► ” blinks on the display. To resume play, press the button again.

Skip play

To skip to track 6 while track 3 is playing, press the ⏭ button repeatedly until “6” appears (in the track section) on the display. To skip back to track 3 while track 6 is playing, press the ⏮ button repeatedly until “3” appears.

- The number buttons on the remote control can also be used for skip play. To skip to track 6 while one track is playing, press 0, then 6.

Search (forward/reverse)

If the ⏮ or ⏭ button is pressed during play, the player will search at high speed in the forward or reverse direction while the button is being pressed. When the button is released, normal play will continue.

Repeat play

Press the REPEAT button before or during play. The player will play all the tracks or all the programmed tracks repeatedly. “ ↻ ” appears. To cancel repeat play, press the REPEAT button again. “ ↻ ”disappears.

PROGRAMMED PLAY

Up to 24 tracks on a disc can be programmed for play in any order.

- First, select “CD” function and load a disc that you want to programme.
- The tracks must be programmed in the stop mode.
- The same track can be programmed more than once.

1. Press the MEMORY button on the remote control.

2. Select a track by using the ▷▷| or |◁◁ button.
   - The number buttons on the remote control can also be used.

3. Press the MEMORY button.

4. Repeat steps 2-3 to programme additional tracks.
5. Press the ▷II button to start programmed play.

When all programmed tracks have played. the player stops automatically.
- The programme contents are retained in memory.

Any attempt to programme more than 20 tracks will result in “FULL” being displayed and discontinuation of the programming.
The programme contents are retained even if the function selecton is changed. After slecting “CD” function press the MEMORY button. The programmed contents appear.
To cancel programmed play, press the □ button twice.

Checking the programme (Remote control only)

Each time the MEMORY button is pressed in the stop mode, the programmed details sequentially appear on the display.

Changing a programme

To add a new track to a programme: (Remote control only)

1. In the stop mode, press the MEMORY button repeatedly until “- -,- - - -” is displayed.
2. Select a track as explained above.
3. Press the MEMORY button.

To change a track: (Remote control only)

1. In the stop mode, press the MEMORY button repeatedly until the track number to be replaced is displayed.
2. Select a track as explained above.
3. Press the MEMORY button.

Note:
Programmed details cannot be partially deleted or inserted.

LISTENING TO THE RADIO

Before use

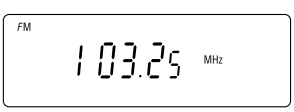
When the unit is shipped from the factory, its AM freqency band is set as “522-1611” kHz (in 9 kHz steps)”.
If your local AM broadcast system is organized in 10 kHz steps, change the frequency band to “520-1610 kHz (in 10 kHz steps)” as follows.
While pressing the □ button on the front panel, press the ▷▷| button on the front panel.

To return the onginal setting repeat steps above.

Automatic/Manual tuning

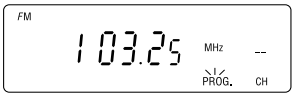
1. Press the FUNCTION button to select TUNER. The radio frequency appears.
2. Press the TUNER/BAND button to select FM, AM.
   Automatic tuning
   Press the TUNING - or TUNING + button for at least 1 second to tune in a station. The unit will scan up or down the band and receive the next receivable station. Press the button again to continue.
   - The ►►| or |◄◄ button on the remote control can also be used.

   Manual tuning
   Press the TUNING - or TUNING + button briefly until the desired frequency is displayed.

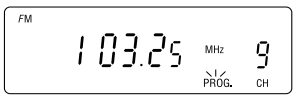


To preset stations (Remote control only)

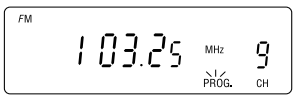
Up to 24 stations for FM band, 12 stations for AM band, can be preset.
1. Tune in the station to be preset as described above.
2. Press the MEMORY button on the remote control.



3. Press the PRESET - or PRESET + button on the front panel (or PRESET button on the remote control) to select the channel number to be preset.



4. While “PROG.” is blinking, press the MEMORY button. “PROG.” disappears.
   - In this example, “103.25 MHz” FM station is preset on FM channel 9.
   - The number buttons on the remote control can also be used. In this example, press 0, then 9 after the step 2 above.



Note:
If the next step is not taken within 10 seconds while performing steps 2 - 4, “PROG.” disappears and the preset operation is cancelled. Press the MEMORY button to continue.
5. Repeat steps above to add more preset stations.

   - When presetting a new station, the previous preset station is cleared.

Listening to preset stations

1. Press the TUNER/BAND button to select FM, AM.
2. Press the PRESET - or PRESET + button on the front panel (or PRESET button on the remote control) to select the desired channel number. The selected channel number appears briefly.
   - The number buttons on the remote control can also be used. Press two number buttons within 2 seconds.

To receive FM stereo broadcasts

“ST” appears when an FM stereo broadcast is received in the stereo mode.
Make sure the reception mode is in stereo. orelse, press the FM MODE button.
- If the signal from an FM stereo station is weak and reception is poor, press the FM MODE button to change to the mono mode. The reception may be improved, but the sound will be monaural.

When beat interference is heard (Remote control only)

A high-pitched noise called “beat” is sometimes heard during reception of radio broadcasts. If this occurs.
1. Press the MEMORY button on the remote control.
2. When “PROG.” is blinking, press the FM MODE button to select “bc-A” or “bc-b”. Select the setting that gives the best results.

LISTENING TO TAPES

1. Press the FUNCTION button to select “TAPE”.
2. Press the cassette holder (EJECT portion) to open it.
3. Load the cassette. (Fig. 7)
   After loading the cassette, push the cassette holder back into position.
4. Press the TAPE button to begin playback.
5. Press the □ button to stop playback at any time. Press it again to remove the cassette.
   When the end of the tape has been reached, automatic stop will be activated.

Note:
- Use the normal tape (TYPE 1).
- Endless tapes cannot be used.
- Do not use C-100 (or longer) tapes. They may jam in the mechanism.

Fast forward and rewind
Press the ⏮ or ⏭ button. When the desired location has been reached, press the □ button.

LISTENING TO OTHER SOURCES

1. Press the FUNCTION button to select “LINE”.
2. Follow the instructions supplied with the Video/Auxiliary equipment.

RECORDING

Recording copyright material without permission of the copyright owners is usually an infringement. If you wish to re-record copyright material, permission from the copyright owner is necessary. SANYO does not approve of, and cannot be held responsible for, any unlawful use of this machine.

Recording compact discs (Synchronous recording)
1. Select “CD” function.
2. Load the disc to be recorded.
   - For programmed recording, programme the material in advance (as described under “PROGRAMMED PLAY”).
3. Select the track number to be recorded if required.
   - For programmed recording, this step is unnecessary.
4. Press the ●/II button (or the ● button on the remote control). The deck enters the recording pause mode and “REC” appears. “ ►” blinks.
5. Press the TAPE button. Recording starts.
6. Press the □ buton to stop recording. Also the CD player stops automatically.

Recording from the tuner or other sources
1. Tune in the radio station to be recorded or play other sources.
2. Press the ●/II button.
3. Press the TAPE button. Recording starts.
4. Press the □ button to stop recording.

When beat interference is heard
A high-pitched noise called “beat” is sometimes heard during the recording of radio broadcasts. If this occurs.
1. Press the MEMORY button on the remote control.
2. While “PROG.” is blinking, press the TUNING - button to select “bc-1” or “bc-2”. Select the setting that gives the best results.

Automatic record muting (Remote control only)
Undesirable parts of a programme can be omitted wile recording.
Press the **O** button once while recording. “REC” blinks and a 5-second unrecorded blank space is created, then the deck enters the recording pause mode. “REC” remains lit and “ ►” blinks on the display.
- To add another 5-second blank space, press the **O** button again.
- To resume recording, press the TAPE button.

Safeguards against accidental erasure
Accidental erasure can be prevented by breaking out the tabs on the end of the cassette tape (where the tape is not exposed) using a screwdriver or similar implement.
If a tab is broken out in error and you wish to re-record the tape, simply block the tab hole using adhesive tape and the tape can be used for recording again.

MAINTENANCE

Cleaning the tape heads
To ensure continued high performance, use cotton swab to clean the heads, pinch roller and capstan of the deck after about every 10 hours of use. If the dirt persists, soak the swab in a little methylated spirit or head cleaning fluid and then clean.

Cleaning the CD player lens
The lens should never be touched. If dust is on the lens, blow it off using a camera lens blower. (Consult your dealer.)

Cleaning the unit
Clean the outside of the unit with a clean soft cloth, moistened with lukewarm water. Do not use benzene, thinner of alcohol since they will mar the finish of the surfaces.

SPECIFICATIONS

Tuner
Reception frequency:
FM: 87.5 - 108 MHz
AM: 522 - 1611 kHz (9 kHz step)
520 - 1610 kHz (10 kHz step)

CD player
Channels:
2-channel stereo
Sampling frequency:
44.1 kHz
Pick-up:
Optical 3-beam semiconductor laser
Laser output:
0.6 mW (Continuous wave max.)
Wave length:
790 nm
Wow/flutter:
Below measurable limits

Cassette deck
Track system:
4-track, 2-channel stereo
Frequency response:
80 Hz to 135 kHz
Signal-to-noise ratio:
40 dB
Wow/flutter:
0.15% (WRMS)
Fast forward/rewind time:
Approx. 110 sec. (C-60)

General
Inputs:
VIDEO IN: 400 mV/50K ohms
Outputs:
SPEAKERS: 4 ohms
PHONES: 8 - 32 ohms
Power requirements:
AC 230 V, 50 Hz
Power consumption:
21 W
Dimensions:
150(W) x 230(H) x 205(D) mm
Weight:
2.3 kg

Speaker systems
Type:
2-way bass reflex
Unit used:
10 cm cone type
Maximum power-handling capacity:
8 W (peak)
Nominal impedance:
4 ohms
Dimensions:
145(W) x 230(H) x 170(D) mm
Weight:
1.2 kg (per speaker)

Specifications subject to change without notice.

(SP) 1AD6P1P1584-A

SANYO Electric Co., Ltd.

SPECIFICATIONS

Tuner

Reception frequency

FM : 87.5 - 108.0 MHz
AM: 522 - 1611kHz (9 kHz step)(SP)
520 - 1610kHz (10 kHz step)(SP)
MW: 522 - 1611kHz (9 kHz step)(UK)
520 - 1610kHz (10 kHz step)(UK)
LW : 144 - 288kHz (UK)

CD player

Channels ..... 2-channel stereo
Sampling frequency ..... 44.1 kHz
Pick-up ..... Optical 3-beam semiconductor laser
Laser output ..... 0.6mW(Continuous wave max.)
Wave length ..... 790 nm
Wow and Flutter ..... Below measurable limits

Cassette deck

Track system ..... 4-track, 2-channel stereo
Frequency response ..... 80 Hz - 15 kHz (UK)
80 Hz - 13.5 kHz (SP)
Signal to noise ratio ..... 40 dB
Wow and Flutter ..... 0.15% (WRMS)
Fast forward / Rewind time .... Approx. 110 sec. (C-60)

General

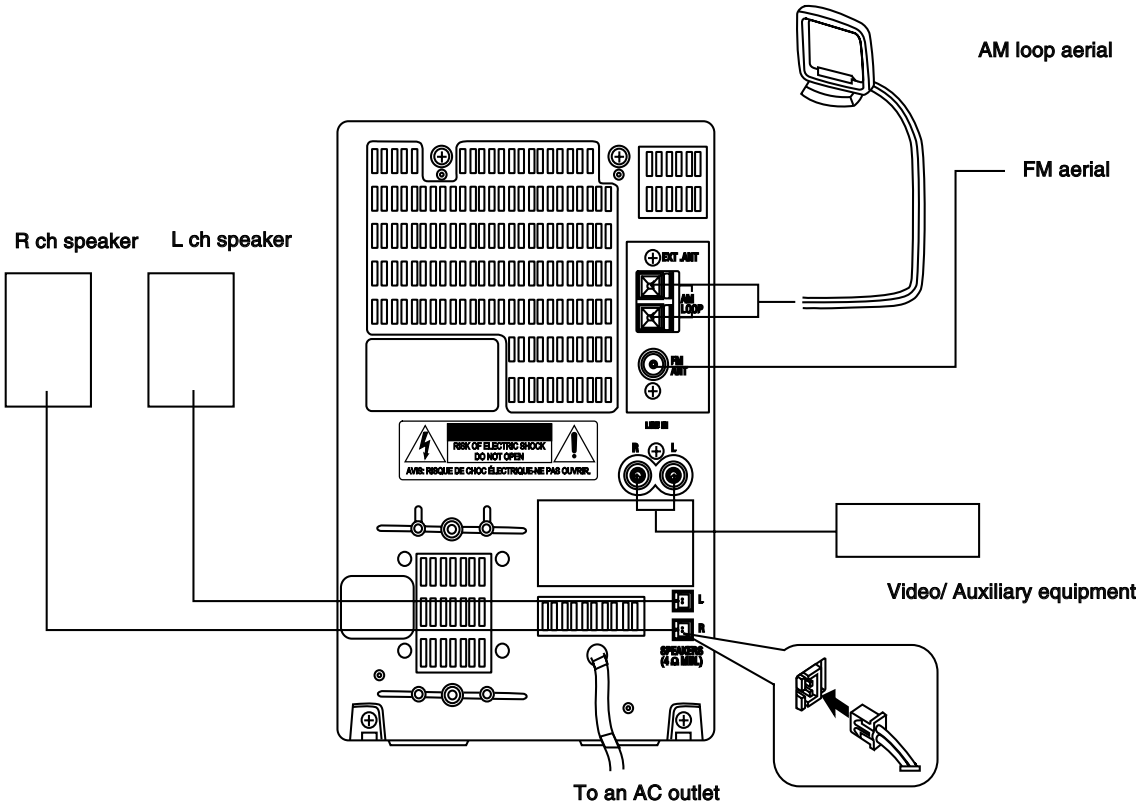
Output power ..... 4W x 2
(at 4 ohms, 10% distortion) (UK)
Inputs ..... VIDEO IN: 400mV/50k ohms (SP)
Outputs ..... SPEAKERS : 4 ohms
PHONES : 8 - 32 ohms
Power requirements ..... AC 230V, 50Hz
Power consumption ..... 21 W
Dimensions (W x H x D) ..... Approx. 150 x 230 x 205 mm
Weight ..... Approx. 2.3 kg

Speaker system

Type ..... Full range bass reflex
Unit used ..... 10 cm cone type
Maximum
power-handling capacity ..... 8 W (peak)
Nominal impedance ..... 4 ohms
Dimensions (W x H x D) ..... Approx. 145 x 230 x 170 mm
Weight ..... Approx. 1.2 kg (per speaker)

Specifications subject to change without notice.

SYSTEM CONNECTIONS



WHAT TO DO IF

If the operation of the unit or display is not normal,

1. Disconect the mains lead.
2. Press the CD button on the unit for at least 30 seconds.
3. Connect the mains lead.
4. Operate the unit.

LASER BEAM SAFETY PRECAUTION

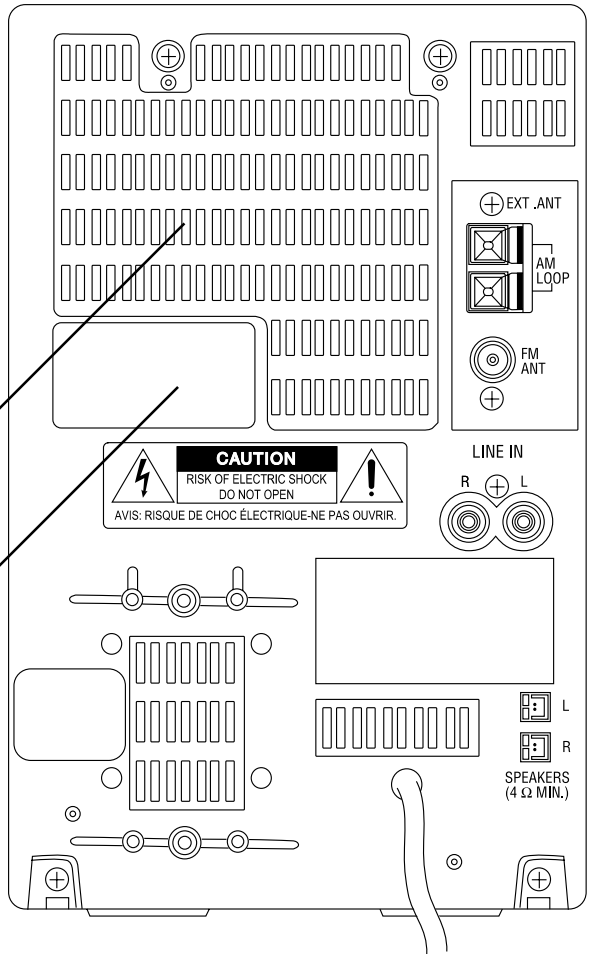
- Pick-up that emits a laser beam is used in this CD player section.

CAUTION :
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

LASER OUTPUT..... 0.6 mW Max. (CW)
WAVELENGTH ..... 790 nm

CAUTION – INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL – USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARNING – OSYNLIG LASER STRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.
VORSICHT – UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.
VARO – AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT



CD PICK-UP MAINTENANCE

About pick-up (Optical lens) Cleaning

Clean a lens with swab of the cotton which moistened it with alcohol, cleaning paper or cleaning disc appointed.
Specified cleaning disc : LC-1 (Part code : 645 026 1961 ..... manufactured by SANYO.)

Show a clean procedure in the following in reference by swab of cotton.

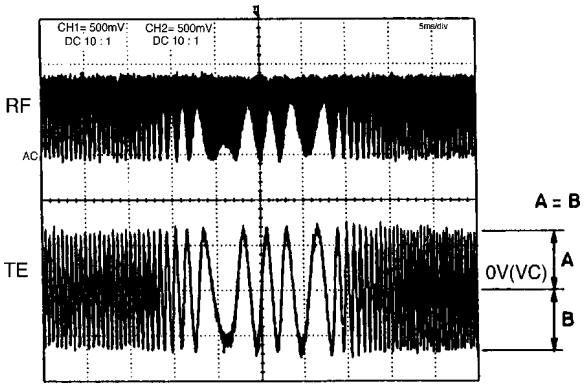
1. Cotton swab is wrapped with Cleaning paper.
2. Add the isopropyl alcohol.
3. Gently move the tip of cotton swab just like a draw a whirlpool from inside to outside on the surface of lens.

CD PLAYER ADJUSTMENTS

1. ADJUSTMENTS

(1) Confirm the tracking balance

1. Turn on the POWER switch.
2. Connect an Oscilloscope to TP2 (TE) and TP4 (VC).
3. Set the test disc.
4. Press "PLAY" button to turn into the "PLAY" mode.
5. Keep holding "SKIP" button down so as to be "SERCH" mode, then confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V (VC).

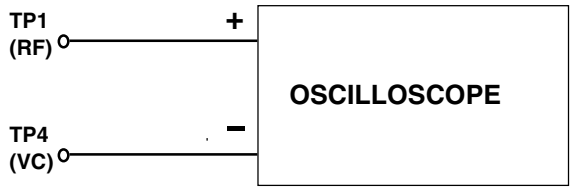


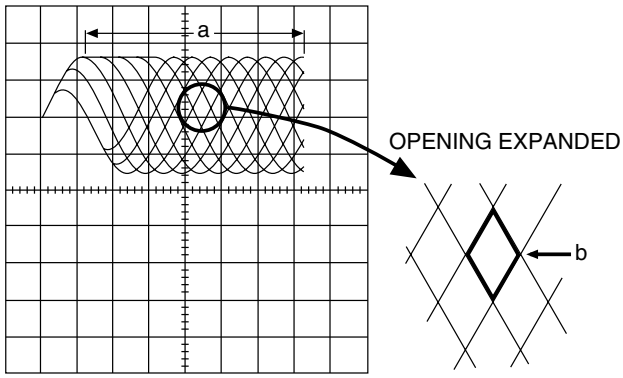
200mV/div.
5ms/div.

CD PLAYER ADJUSTMENTS

(2) Checking the "eye" pattern

1. Switch "ON" the POWER.
2. Connect an oscilloscope to TP1 (RF) and TP4 (VC).
3. Load the test disc.
4. Press the PLAY button.
5. Check to be sure that the "eye" pattern is at the center of waveform and that the diamond shape is clearly defined.
6. Press the STOP button.
7. Turn off the POWER switch.





TAPE ADJUSTMENTS

1. Azimuth Adjustment

- Be sure to clean the heads before attempting to make any adjustment.
- Be sure both channels (1 and 2) are the same level.
  (Using a dual-channel oscilloscope)
- Be sure both channel's waveform are same for the phase matching.
- After completion of the adjustment, use the threadlock (TB-1401B) to secure the azimuth adjustment screws.

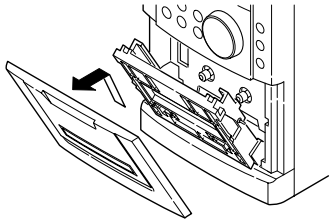


Fig.1

1. Remove the cover deck as Fig.1.
2. Load a test tape (VTT-738 etc. : 10kHz) in the Deck.
3. Press the PLAY button. (Normal playback)
4. Use a + tip screwdriver to turn the screw for normal azimuth adjustment so that the left and right outputs are maximized at the same phase during normal playback. See Fig.2.
5. Adjust so that the waveforms for the left and right channels are in alignment.

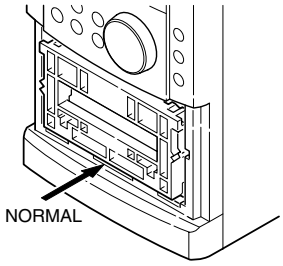


Fig.2

2. Tape Speed Adjustment

- Connect the Frequency Counter to TAPE OUT.

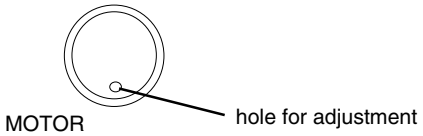


Fig.3

1. Insert the test tape (MTT-111N, etc.; 3,000Hz) into the DECK.
2. Press the PLAY button. .
3. Adjust a hole on the motor bottom so that a frequency counter reading of 3,000 }5Hz is obtained.See Fig.3.
4. Press the STOP button, and eject the test tape.

3. Torque Measurement

Item	Take-up Torque	Back tention	Pully tention
Test Cassette	PLAY:TW2111A(FWD)	PLAY:TW2112A(FWD)	Driving power cassette: TW-2412(PLAY)
PLAY/REV.	30~65 grcm	2~6 grcm	50 grcm
F.FWD/REW	55~140 grcm	-	-

TUNER ADJUSTMENTS (for UK)

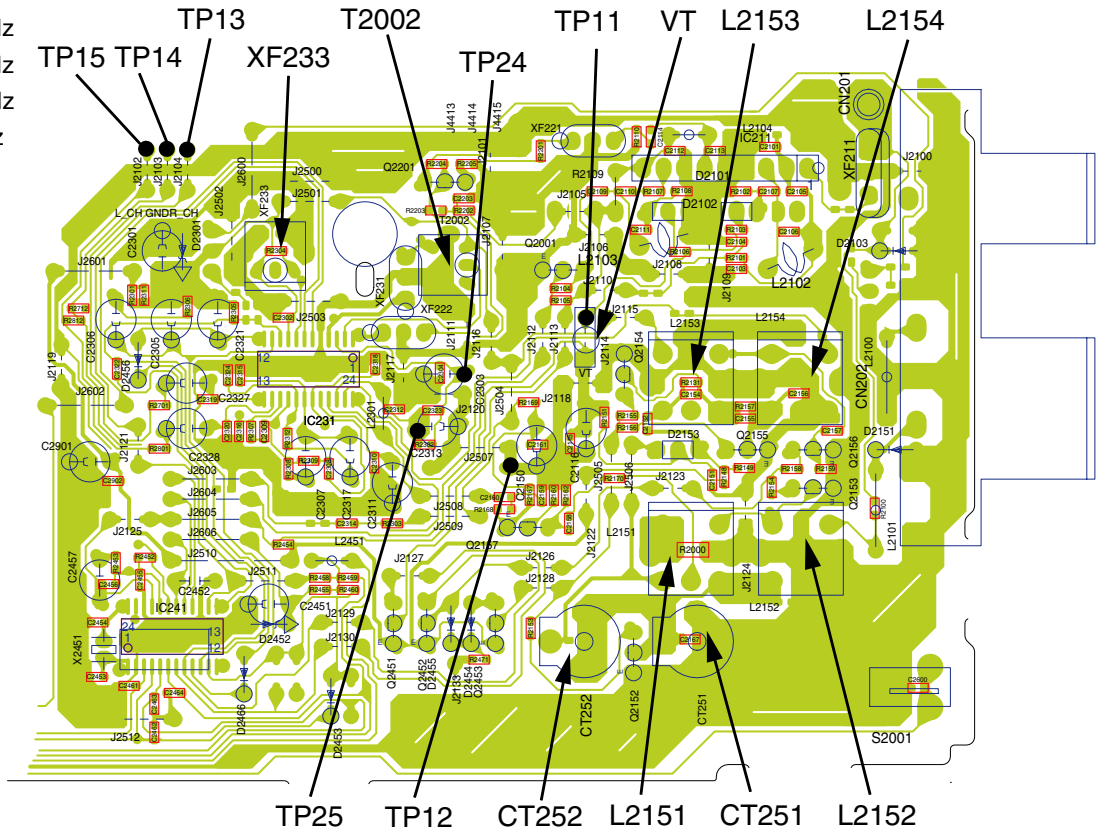
- Use a plastic screw driver for adjustments.
- MODE : ST (Stereo)
- Speaker impedance : 4 ohm
- TUNING

  FM : 87.5 - 108MHz

  MW: 522 - 1611kHz

  520 - 1610kHz

  LW : 144 - 288kHz



Antenna : 75Ω unbalanced, Modulation : 1 KHz

Dev. : ±22.5kHz(MONO), ±22.5kHz(STEREO), ±6.75kHz(PILOT)

RF Level : dBuV EMF, Output Level : about 30mV at TP13, TP14, TP15

1. FM

Step	Adjusting Circuit	Connection		SG Frequency	Adjustment	Remark
		Input	Output			
1	IF(0V) Adjustment	FM Antenna SG=66dBuV	Alignment voltage IC231 3-22pin(TP24,25) is 0.0±0.05V	98MHz	XF233	Alignment voltage IC231 3-22pin is 0.0±0.05V
2	Cover Voltage	---	Connect Digital DC voltmeter to TP11(H), TP12(E).	87.5MHz	---	1.00±0.05V Check Only
		---		108.0MHz	---	5.80±0.50V Check Only

Anntena : IRE Loop(SG), Moduration : 1kHz, 30%

RF Level : dBuV EMF, Output Level : about 30mV at TP13, TP14, TP15

2. MW

Step	Adjusting Circuit	Connection		SG Frequency	Adjustment	Remark
		Input	Output			
1	IF Adjustment	Loop Ant	Connect Sweep generator to test point TP13, TP14 and TP15.	at 999kHz	T2002	Maximum
2	Cover Voltage	---	Connect Digital DC voltmeter to TP11(H)and TP12(E).	522kHz	L2153	1.00±0.05V
		---		1611kHz		6.80±0.50V Check Only
3	Tracking	Loop Ant	Connect to VTVM point TP13 or TP14 and TP15.	603kHz	L2151	Maximum
				1404kHz	CT252	

3. LW

Step	Adjusting Circuit	Connection		SG Frequency	Adjustment	Remark
		Input	Output			
1	Cover Voltage	---	Connect Digital DC voltmeter to TP11(H) and TP12(E).	144kHz	L2154	1.00±0.05V
		---		288kHz	---	5.60±0.50V Check Only
2	Tracking	Loop Ant	Connect to VTVM point TP13 or TP14 and TP15.	162kHz	L2152	Maximum
				279kHz	CT251	

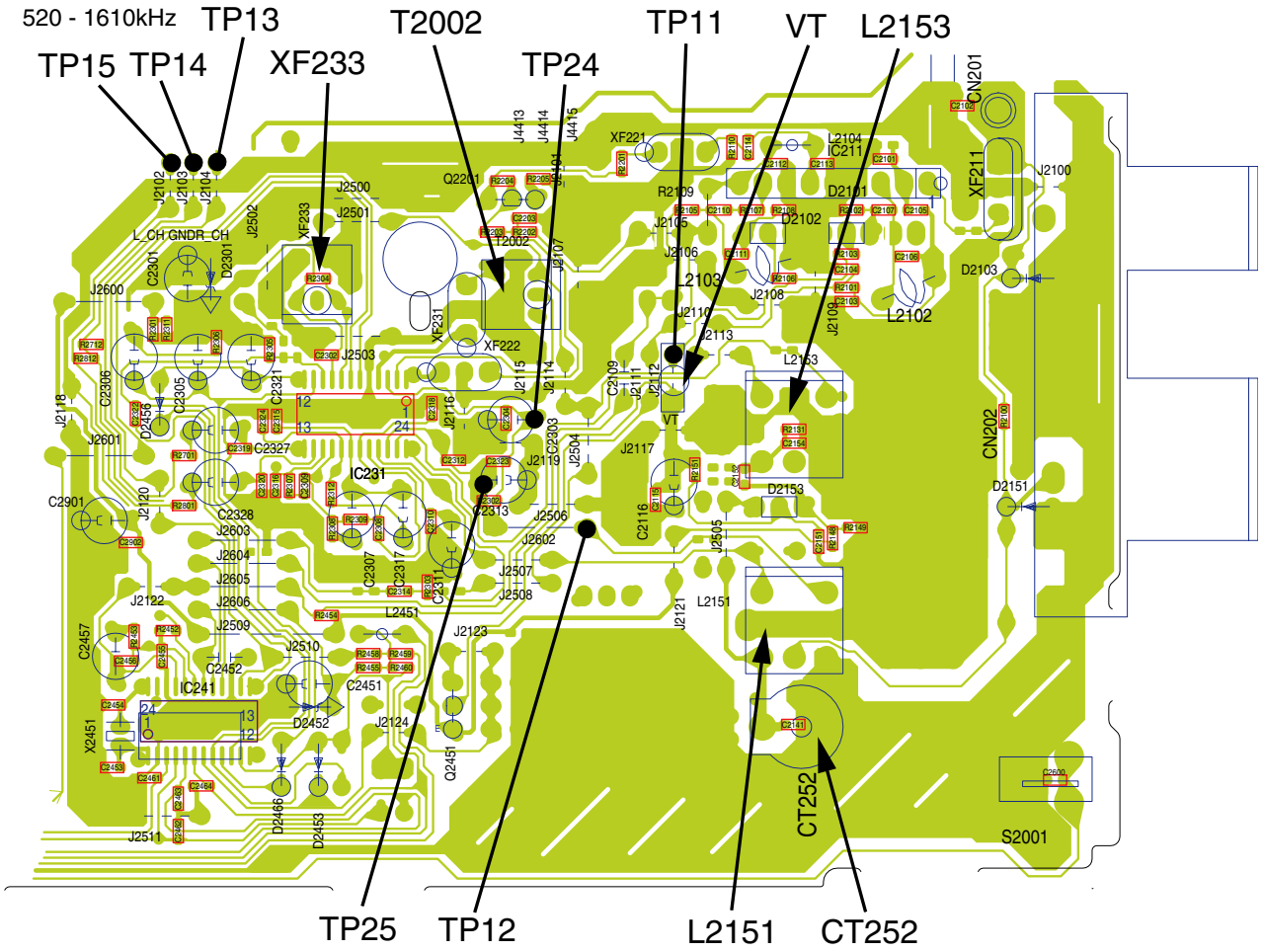
TUNER ADJUSTMENTS (for SP)

- Use a plastic screw driver for adjustments.
- MODE : ST (Stereo)
- Speaker impedance : 4 ohm
- TUNING

  FM : 87.5 - 108MHz

  AM : 522 - 1611kHz

  520 - 1610kHz



Antenna : 75Ω unbalanced, Modulation : 1 KHz

Dev. : ±22.5kHz(MONO), ±22.5kHz(STEREO), ±6.75kHz(PILOT)

RF Level : dBuV EMF, Output Level : about 30mV at TP13, TP14, TP15

1. FM

Step	Adjusting Circuit	Connection		SG Frequency	Adjustment	Remark
		Input	Output			
1	IF(0V) Adjustment	FM Antenna SG=66dBuV	Alignment voltage IC231 3-22pin(TP24,25) is 0.0±0.05V	98MHz	XF233	Alignment voltage IC231 3-22pin is 0.0±0.05V
2	Cover Voltage	---	Connect Digital DC voltmeter to	87.5MHz	---	1.00±0.05V
		---	TP11(H), TP12(E).	108.0MHz	---	5.50±0.50V Check Only

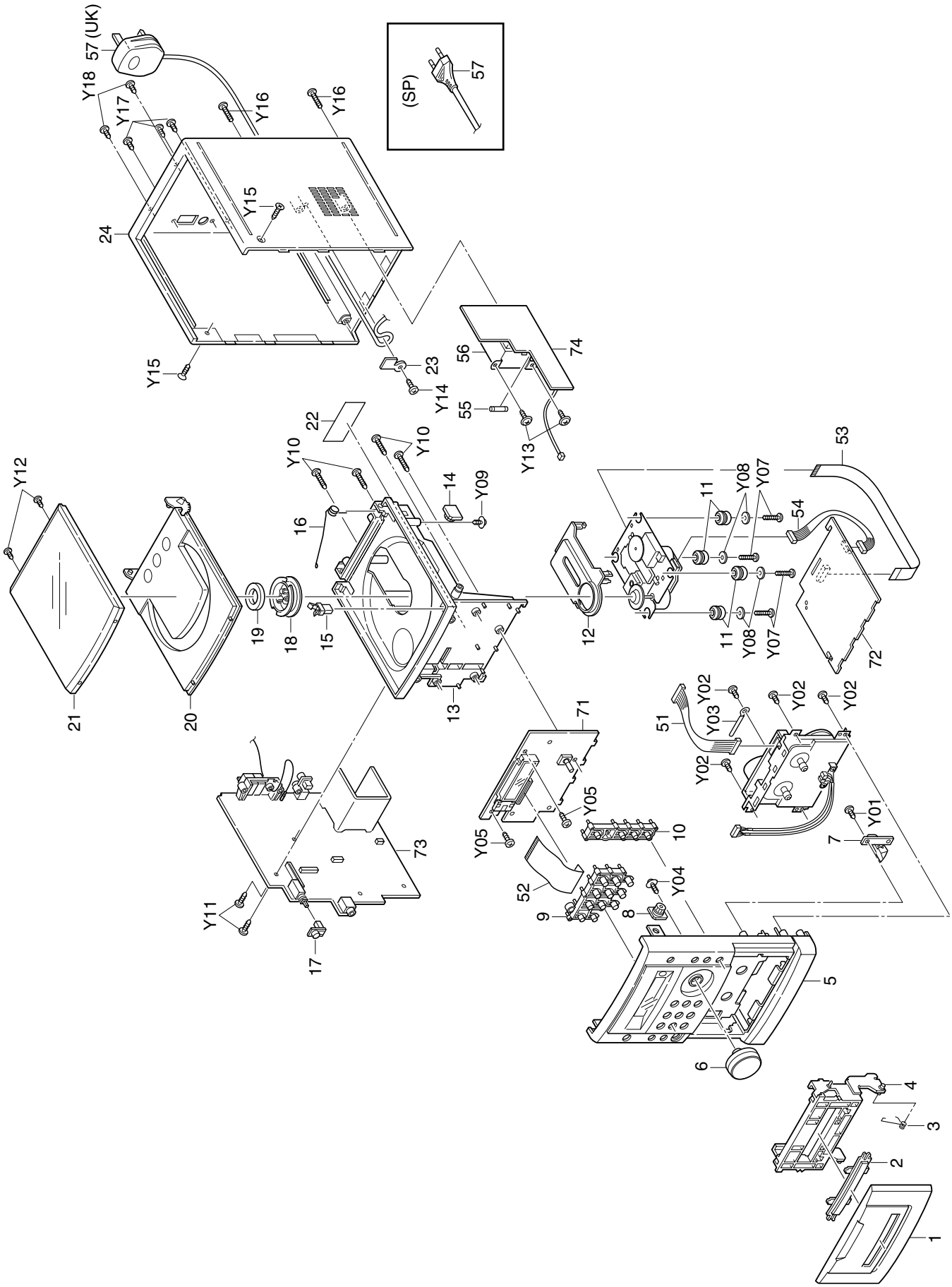
Anntena : IRE Loop(SG), Moduration : 1kHz, 30%

RF Level : dBuV EMF, Output Level : about 30mV at TP13, TP14, TP15

2. AM

Step	Adjusting Circuit	Connection		SG Frequency	Adjustment	Remark
		Input	Output			
1	IF Adjustment	Loop Ant	Connect Sweep generator to test point TP13, TP14 and TP15.	450KHz at 999kHz	T2002	Maximum
2	Cover Voltage	---	Connect Digital DC voltmeter to	522kHz	L2153	1.00±0.05V
		---	TP11(H)and TP12(E).	1611kHz		7.10±0.50V Check Only
3	Tracking	Loop Ant	Connect to VTVM point TP13 or TP14 and TP15.	603kHz	L2151	Maximum
				1404kHz	CT252	

EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

EACH PRECAUTION IN THIS MANUAL SHOULD BE FOLLOWED DURING SERVICING. COMPONENTS IDENTIFIED WITH THE IEC SYMBOL ⚠ IN THE PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATED COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. WHEN REPLACING A COMPONENT IDENTIFIED BY ⚠, USE ONLY THE REPLACEMENT PARTS DESIGNATED, OR PARTS WITH THE SAME RATINGS OF RESISTANCE, WATTAGE OR VOLTAGE THAT ARE DESIGNATED IN THE PARTS LIST IN THIS MANUAL. LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS MUST BE MADE TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE PRODUCT TO THE CUSTOMER.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.
Regular type resistors are less than 1/4 W Carbon type and Chip type resistors.
Regular type capacitors are less than 50 V and less than 1000 μF type of Ceramic type, Electrical type and Chip type.

PACKING & ACCESSORY

REF.NO.	PART NO.	DESCRIPTION
	614 319 7416	CARTON CASE (UK)
	614 321 4045	CARTON CASE (SP)
	614 319 7430	CUSHION,REAR
	614 319 7447	CUSHION,FRONT
	614 319 7454	INSTRUCTION MANUAL (UK)
	614 321 4144	INSTRUCTION MANUAL (SP)
	645 047 0509	POLY SHEET-0900X0300*NC
	645 005 1227	ASSY,ANTENA,LOOP
or	645 046 8322	ASSY,ANTENA,LOOP
	645 051 8829	REMOCON RB-DA280
	614 618 9404	LID,BATTERY,SERVICE
	614 319 6662	ASSY,BOX,SPEAKER

CABINET & CHASSIS

REF.NO.	PART NO.	DESCRIPTION
1	614 319 6983	COVER,DECK
2	614 319 7003	DEC,WINDOW,DECK
3	614 320 3520	SPRING,DOOR DECK
4	614 319 7096	LID,CASSETTE
5	614 319 6846	ASSY,PANEL,FRONT
6	614 319 7072	KNOB,VOLUME
7	614 303 1277	LATCH,CAM,DECK DOOR,LOCKING
8	614 309 7969	ASSY,GEAR,LID,CASSETTE
9	614 319 6952	BUTTON,OPERATION,11 KEYS
10	614 319 6945	BUTTON,RIGHT,4 KEYS
11	614 310 3899	SPACER,MECHA,MTG CD+DA11
12	614 307 2072	COVER,PICK-UP
13	614 319 7119	MOUNTING,CD
14	614 322 2125	ASSY,GEAR,LID,CD
15	614 303 0263	LATCH,PUSH,CD DOOR LOCKING
16	614 319 7201	SPRING,DOOR CD
17	614 319 6938	BUTTON,POWER
18	614 307 8821	PULLEY
19	614 303 0256	LATCH,MAGNET
20	614 319 7102	LID,CD
21	614 319 7058	DEC,WINDOW,CD
22	614 317 3090	LABEL,SAFETY,LASER,CAUTION
23	614 316 1172	STOPPER
24	614 319 6822	ASSY,CABINET,REAR (UK)
24	614 321 3888	ASSY,CABINET,REAR (SP)

FIXING PARTS

REF.NO.	PART NO.	DESCRIPTION
Y01	411 021 3503	SCR S-TPG BIN 3X10, F-PANEL+LATCH,CAM
Y02	411 021 3503	SCR S-TPG BIN 3X10, F-PANEL+DECK MECHA
Y03	614 129 9136	LUG,LEAD FIX
Y04	411 020 8905	SCR S-TPG BRZ+FLG 3X10, F-PANEL+ASSY.GEAR,DECK
Y05	411 021 3503	SCR S-TPG BIN 3X10, FRONT PWB+MTG CD
Y06	411 021 1806	SCR S-TPG BIN 2.6X10,MTG CD+DA11
Y07	411 092 0906	WASHER Z 2.6X10X0.5, MTG CD+DA11
Y08	411 020 8905	SCR S-TPG BRZ+FLG 3X10, MTG CD+ASSY.GEAR,CD
Y09	411 021 4906	SCR S-TPG BIN 3X20, F-PANEL+MOUNTING,CD
Y10	411 021 3503	SCR S-TPG BIN 3X10, MAIN PCB+MTG CD
Y11	411 184 0906	SCR S-TPG BIN 2.3X10, LID CD+DEC WINDOW CD
Y12	412 032 6408	SPECIAL SCREW,REAR+P-TRANS
Y13	411 021 3503	SCR S-TPG BIN 3X10, REAR+STOPPER
Y14	411 098 7800	SCR S-TPG FLT 3X12, REAR+MTG(L/R)
Y15	411 021 4906	SCR S-TPG BIN 3X20, REAR+PANEL,FRONT
Y16	411 021 3503	SCR S-TPG BIN 3X10, REAR+ANT TERMINAL REAR+AUDIO TERMINAL
Y17	411 021 3503	SCR S-TPG BIN 3X10, REAR+MTG CD

ELECTRICAL PARTS

REF.NO.	PART NO.	DESCRIPTION
51	614 322 2279	ASSY,WIRE,AMP-TAPE MECHA
52	614 322 2349	FLEXIBLE FLAT CABLE, FRONT-AMP
53	614 310 5459	FLEXIBLE FLAT CABLE, CD-CD MECHA
or	614 313 7023	FLEXIBLE FLAT CABLE, CD-CD MECHA
54	614 316 8041	ASSY,WIRE,CD-CD MECHA
55	⚠ 423 016 7908	FUSE 250V 2.5A
56	⚠ 645 050 7373	TRANS,POWER
57	⚠ 645 036 9797	CORD,POWER-1.6MK (UK)
or	⚠ 645 036 9803	CORD,POWER-1.6MK (UK)
57	⚠ 645 016 9939	CORD,POWER-1.74MK (SP)

PARTS LIST

FRONT P.W. BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
71	614 320 0437	ASSY,PWB,FRONT (Only initial)
AC601	614 320 3469	COVER,LED,COVER_LED
AH601	614 320 3483	HOLDER,LCD,HOLDER_LCD
AS601	614 314 9286	DEC,SHEET,LCD,DEC_SHEET_LCD
CN601	645 012 5324	SOCKET,FPC 28P
D6010	407 012 4406	DIODE 1SS133
D6110	407 012 4406	DIODE 1SS133
D6111	407 012 4406	DIODE 1SS133
D6112	407 225 7300	LED LT03B3-43-URE1
D6113	407 012 4406	DIODE 1SS133
IC601	410 432 5700	IC LC867232A-5Z21
L6010	645 001 5441	INDUCTOR,2.2U K
LCD60	645 050 7397	LCD
Q6107	405 141 3208	TR KTC3198-Y
or	405 141 3307	TR KTC3198-GR
or	405 019 2708	TR 2SC536-F-NP
or	405 019 3804	TR 2SC536-G-NP
Q6108	405 143 8706	TR KTC3199-GR
or	405 011 8500	TR 2SC1740S-R
or	405 011 8609	TR 2SC1740S-S
or	405 017 9600	TR 2SC3330-T
or	405 017 9709	TR 2SC3330-U
S6001	645 044 6535	SWITCH,ROTARY(ENCODER)
S6110	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6111	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S6112	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6113	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6114	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6115	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6116	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6117	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6210	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S6211	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6212	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6213	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6214	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6215	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
S6216	614 220 5471	SWITCH,TACT
or	614 240 1002	SWITCH,TACT
or	645 006 5958	SWITCH,PUSH 1P-1T
SE601	407 217 1101	PHOTO DIODE SPS-442-1G
X6102	645 018 6103	OSC,CERAMIC 6.000MHZ

CD P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
72	614 320 0444	ASSY,PWB,CD (Only initial)
CN111	645 026 2463	SOCKET,FFC 15P
or	645 040 0513	SOCKET,FPC 15P
CN113	645 005 8127	PLUG,6P,BASEMECHA
or	614 310 2472	PLUG,6P,BASEMECHA
D1402	407 099 5204	ZENER DIODE MTZJ5.1B
D1403	407 004 9709	DIODE DSK10C
D1404	407 012 4406	DIODE 1SS133
D1410	⚠ 407 098 3300	DIODE RL153-BF-S2
D1482	407 012 4406	DIODE 1SS133
IC101	409 396 8100	IC LA9241ML
IC102	409 435 2106	IC LC78622NE
IC103	⚠ 409 486 8706	IC MM1469XH
L1451	645 001 4550	INDUCTOR,10U K
LUG01	614 129 9082	LUG
PR140	⚠ 645 014 2499	PROTECTOR,0.4A 125V
Q1301	405 008 6809	TR 2SB808-F-SPA
or	405 151 4509	TR KTA1270-Y
or	405 151 4608	TR KTA1270-O
or	405 008 7103	TR 2SB808-G-SPA
Q1401	⚠ 405 009 5306	TR 2SB927-T
or	⚠ 405 009 5207	TR 2SB927-S
or	⚠ 405 141 3604	TR KTA1273-Y
X1451	614 231 2667	RESONATOR

AMPLIFIER & TUNER P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
73	614 320 0420	ASSY,PWB,AMP-TU (UK) (Only initial)
73	614 321 5721	ASSY,PWB,AMP-TU (SP) (Only initial)
C2457	403 259 0508	NP-ELECT 1U M 50V
C4601	403 057 3503	POLYESTER 0.1U K 50V
C4605	403 061 3605	POLYESTER 0.039U J 50V
C4606	403 061 7702	POLYESTER 4700P J 50V
C4607	403 059 3204	POLYESTER 2200P J 50V
C4608	403 060 2807	POLYESTER 0.027U K 50V
C4734	403 058 4608	POLYESTER 0.15U J 50V
C4834	403 058 4608	POLYESTER 0.15U J 50V
C4913	403 329 5907	ELECT 3300U M 25V
CN201	614 221 8273	TERMINAL
CN202	645 038 7715	TERMINAL
or	645 025 4703	TERMINAL,ANTENNA
CN400	645 012 5324	SOCKET,FPC 28P
CN401	645 006 1875	PLUG,2P,SPEAKER
CN402	645 006 1875	PLUG,2P,SPEAKER
CN440	614 310 2472	PLUG,6P
or	645 005 8127	PLUG,6P
CN441	614 310 2731	PLUG,2P,POWER
or	645 004 2881	PLUG,2P,POWER
CN442	614 276 6835	SOCKET,JACK
CN443	645 011 6384	JACK,PHONE D3.6,HEAD PHONE
CN445	614 310 2519	PLUG,10P
or	645 005 8158	PLUG,10P
CT251	645 032 5236	TRIMMER,18PF (UK)
CT252	645 032 5663	TRIMMER,7PF
D2101	407 157 8109	VARACTOR DI SVC211-B
D2102	407 157 8109	VARACTOR DI SVC211-B
D2103	407 012 4406	DIODE 1SS133
D2151	407 012 4406	DIODE 1SS133
D2153	407 105 1602	VARACTOR DI SVC342M-V
or	407 105 1305	VARACTOR DI SVC342L-V
D2301	407 063 9108	ZENER DIODE MTZJ6.8B
D2451	407 012 4406	DIODE 1SS133
D2452	407 153 7502	ZENER DIODE GZS3.0B
D2453	407 012 4406	DIODE 1SS133
D2454	407 012 4406	DIODE 1SS133 (UK)
D2455	407 012 4406	DIODE 1SS133 (UK)
D2456	407 012 4406	DIODE 1SS133
D2466	407 012 4406	DIODE 1SS133
D4951	⚠ 407 099 6003	ZENER DIODE MTZJ9.1B

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
D4953	407 012 4406	DIODE 1SS133
D4954	407 012 4406	DIODE 1SS133
D4960	407 012 4406	DIODE 1SS133
D4961	407 012 4406	DIODE 1SS133
D4963	407 012 4406	DIODE 1SS133
D4964	407 012 4406	DIODE 1SS133
HS401	614 319 7065	HEAT SINK,HEATSINK
IC211	409 016 0200	IC LA1186N-AUDIO
IC231	409 474 3201	IC LA1844ML
IC241	409 439 4502	IC LC72121M-D
IC440	409 451 7406	IC AN7348K
IC441	409 474 6103	IC LC75342M
IC442	⚠ 409 295 7402	IC TA8229K
IC443	409 189 3404	IC BA7755A
L2100	⚠ 645 037 2858	CORE,PIPE (UK)
L2101	⚠ 645 037 2858	CORE,PIPE (UK)
L2102	645 040 2753	INDUCTOR,AIR —
L2103	645 040 2746	COIL,AIR —
L2104	645 002 1534	INDUCTOR,8.2U K
L2151	645 040 2685	TRANS,ANT,796KHZ (UK)
L2151	645 037 2377	TRANS,ANT,796KHZ (SP)
L2152	645 040 2692	TRANS,ANT,796KHZ (UK)
L2153	645 040 2708	TRANS,OSC,796KHZ (UK)
L2153	645 040 2739	TRANS,OSC,796KHZ (SP)
L2154	645 040 2722	TRANS,OSC,796KHZ (UK)
L2301	645 004 0580	INDUCTOR,1M J (UK)
L2451	645 001 4581	INDUCTOR,100U K
L4600	645 006 1523	INDUCTOR,470U J
L4601	645 006 1523	INDUCTOR,470U J
L4602	645 037 2858	CORE,PIPE
L4603	645 006 1523	INDUCTOR,470U J
L4604	645 037 2858	CORE,PIPE
L4781	645 002 1459	INDUCTOR,22U K
L4782	645 002 1459	INDUCTOR,22U K
L4881	645 002 1459	INDUCTOR,22U K
L4882	645 002 1459	INDUCTOR,22U K
L4981	645 002 1459	INDUCTOR,22U K
L4982	645 002 1459	INDUCTOR,22U K
PR495	⚠ 645 042 2621	PROTECTOR,1.5A 125V
PR496	⚠ 645 042 2621	PROTECTOR,1.5A 125V
Q2152	405 016 0806	TR 2SC2839-E (UK)
or	405 151 4103	TR KTC3193-Y (UK)
or	405 151 4202	TR KTC3193-O (UK)
Q2153	405 016 0806	TR 2SC2839-E (UK)
or	405 151 4103	TR KTC3193-Y (UK)
or	405 151 4202	TR KTC3193-O (UK)
Q2154	405 016 0806	TR 2SC2839-E (UK)
or	405 151 4103	TR KTC3193-Y (UK)
or	405 151 4202	TR KTC3193-O (UK)
Q2155	405 151 4202	TR KTC3193-O (UK)
or	405 151 4103	TR KTC3193-Y (UK)
or	405 016 0806	TR 2SC2839-E (UK)
Q2156	405 151 4202	TR KTC3193-O (UK)
or	405 151 4103	TR KTC3193-Y (UK)
or	405 016 0806	TR 2SC2839-E (UK)
Q2157	405 035 8609	TR 2SK544-F (UK)
Q2201	405 151 4301	TR KTC3195-Y
or	405 151 4806	TR KTC3195-O
Q2451	405 036 3702	TR 2SA1564
or	405 151 5209	TR KRA107M
or	405 000 0904	TR DTA114YS
or	405 078 2404	TR BN1A4P
Q2452	405 036 3702	TR 2SA1564 (UK)
or	405 151 5209	TR KRA107M (UK)
or	405 000 0904	TR DTA114YS (UK)
or	405 078 2404	TR BN1A4P (UK)
Q2453	405 151 5209	TR KRA107M (UK)
or	405 000 0904	TR DTA114YS (UK)
or	405 078 2404	TR BN1A4P (UK)
or	405 036 3702	TR 2SA1564 (UK)

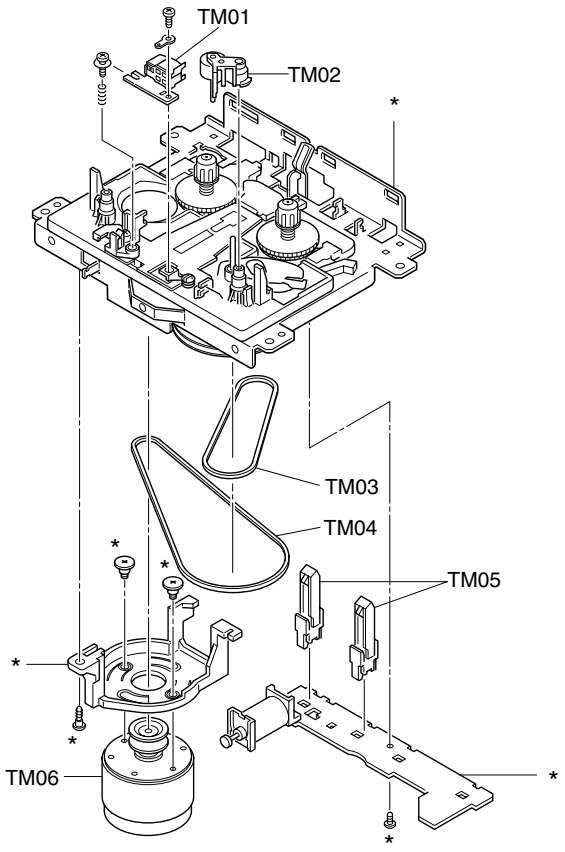
REF.NO.	PART NO.	DESCRIPTION
Q4410	405 141 3406	TR KTA1266-GR
or	405 141 3505	TR KTA1266-Y
or	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4600	405 155 0002	TR MPSA56
Q4601	405 000 3806	TR DTC114YS
or	405 143 0007	TR KRC107M
Q4602	405 141 3307	TR KTC3198-GR
or	405 141 3208	TR KTC3198-Y
or	405 019 3804	TR 2SC536-G-NP
or	405 019 2708	TR 2SC536-F-NP
Q4603	405 141 3307	TR KTC3198-GR
or	405 141 3208	TR KTC3198-Y
or	405 019 2708	TR 2SC536-F-NP
or	405 019 3804	TR 2SC536-G-NP
Q4700	405 000 3806	TR DTC114YS
or	405 143 0007	TR KRC107M
Q4701	405 000 3806	TR DTC114YS
or	405 143 0007	TR KRC107M
Q4751	405 033 6805	TR 2SD1468S-S
or	405 151 4400	TR KTD1303
or	405 021 0204	TR 2SD1012-F-SPA
or	405 021 0600	TR 2SD1012-G-SPA
or	405 033 6706	TR 2SD1468S-R
Q4800	405 143 0007	TR KRC107M
or	405 000 3806	TR DTC114YS
Q4801	405 000 3806	TR DTC114YS
or	405 143 0007	TR KRC107M
Q4851	405 151 4400	TR KTD1303
or	405 021 0204	TR 2SD1012-F-SPA
or	405 021 0600	TR 2SD1012-G-SPA
or	405 033 6706	TR 2SD1468S-R
or	405 033 6805	TR 2SD1468S-S
Q4920	405 141 3307	TR KTC3198-GR
or	405 141 3208	TR KTC3198-Y
or	405 019 2708	TR 2SC536-F-NP
or	405 019 3804	TR 2SC536-G-NP
Q4930	405 033 6805	TR 2SD1468S-S
or	405 033 6706	TR 2SD1468S-R
or	405 021 0600	TR 2SD1012-G-SPA
or	405 151 4400	TR KTD1303
or	405 021 0204	TR 2SD1012-F-SPA
Q4931	405 000 0508	TR DTA114ES
or	405 110 5400	TR KRA102M-A
Q4951	⚠ 405 138 6403	TR KTD2058Y
or	⚠ 405 095 1602	TR 2SD2061-E
or	⚠ 405 095 1701	TR 2SD2061-F
Q4960	405 155 0002	TR MPSA56
Q4961	405 155 0002	TR MPSA56
Q4962	405 000 3806	TR DTC114YS
or	405 143 0007	TR KRC107M
Q4963	405 000 3806	TR DTC114YS
or	405 143 0007	TR KRC107M
R4940	⚠ 402 081 0205	FUSIBLE RES 27 JA 1/4W
S2001	645 023 5795	SWITCH,LEVER
S4951	⚠ 645 052 2772	SWITCH,PUSH 2P-2TX2,POWER SW
SA401	411 021 6405	SCR S-TPG BIN 3X8
SA402	411 021 6405	SCR S-TPG BIN 3X8
T2002	645 046 2023	FILTER,450KHZ
X2451	645 023 4965	OSC,CRYSTAL 7.2MHZ
X2451	645 053 4263	OSC,CRYSTAL 7.2MHZ (SP)
XF211	645 026 2975	FILTER,BP 108MHZ
or	614 252 1045	FILTER,LC
XF221	645 010 7665	CERAMIC FILTER 10.70MHZ
or	645 010 0079	CERAMIC FILTER 10.70MHZ
or	614 240 2917	FILTER,CERAM
XF222	645 010 7665	CERAMIC FILTER 10.70MHZ
or	645 010 0079	CERAMIC FILTER 10.70MHZ
or	614 240 2917	FILTER,CERAM
XF231	645 041 9324	CERAMIC FILTER 450KHZ
XF233	645 039 9923	TRANS,IF 10.7MHZ
or	645 040 9981	TRANS,IF 10.7MHZ

PARTS LIST

POWER TRANSFORMER P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
74	614 320 0451	ASSY,PWB,PT,PT (Only initial)
CN420	614 020 1215	SOCKET,2P
CN421	614 017 8203	TERMINAL BOARD
CN422	614 017 8203	TERMINAL BOARD
CN423	614 322 2262	ASSY,WIRE,PT-AMP WIRE
D4280	⚠ 407 098 3300	DIODE RL153-BF-S2
D4281	⚠ 407 098 3300	DIODE RL153-BF-S2
D4282	⚠ 407 098 3300	DIODE RL153-BF-S2
D4283	⚠ 407 098 3300	DIODE RL153-BF-S2
FCL41	⚠ 645 006 4760	HOLDER,FUSE
or	⚠ 645 031 7903	HOLDER,FUSE
FCL42	⚠ 645 006 4760	HOLDER,FUSE
or	⚠ 645 031 7903	HOLDER,FUSE
L4291	⚠ 645 017 8061	INDUCTOR,181M
or	⚠ 645 038 6053	INDUCTOR,181U
or	⚠ 645 041 3087	INDUCTOR,180U

EXPLODED VIEW & PARTS LIST(TAPE MECHANISM)

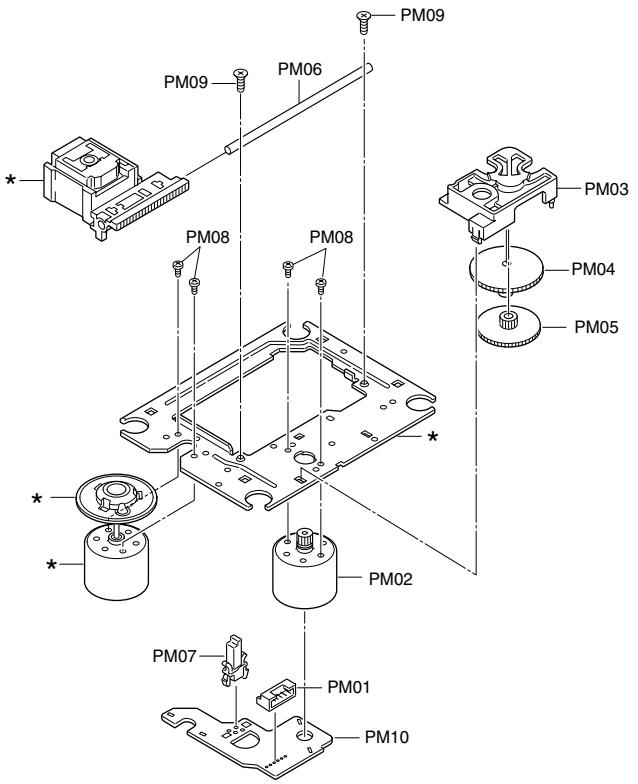


TAPE MECHANISM

REF.NO.	PART NO.	DESCRIPTION
	614 320 4213	ASSY,MECHA,TM-DA280TN-SH
TM01	645 052 2888	RP HEAD C-9142-BD-1025
TM02	645 010 9447	PINCH ROLLER(F) ASSY
TM03	645 045 1959	RF BELT
TM04	645 052 4158	MAIN BELT
TM05	645 045 2048	DETECT SWITCH MXS01190
TM06	645 052 2864	ASSY,MOTOR

*N.S.P : Not supplied as service parts.

EXPLODED VIEW & PARTS LIST(CD MECHANISM)



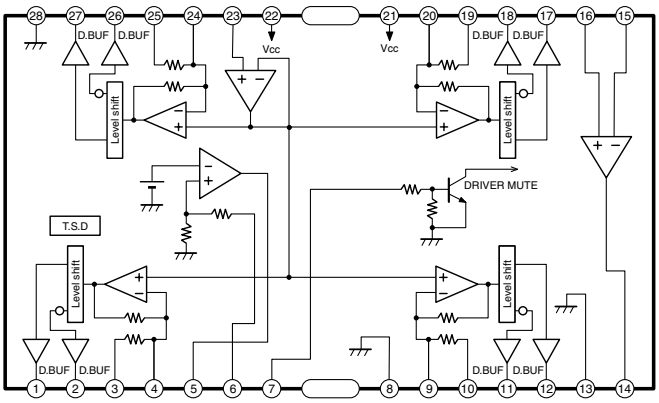
CD MECHANISM

REF.NO.	PART NO.	DESCRIPTION
	614 307 9804	ASSY,MECHA,CDDA11N-SASH
PM01	620 021 8436	PLUG 6P
PM02	620 233 0853	ASSY, MOTOR
PM03	620 236 3776	COVER,GEAR
PM04	620 230 8753	GEAR MIDDLE,RELAY GEAR
PM05	620 230 8760	GEAR DRIVE
PM06	620 231 0596	SHAFT SLIDE
PM07	620 233 0860	SWITCH LEAG,LIMIT SWITCH
PM08	411 104 8401	SCR PAN PCS 2X3
PM09	411 027 5402	SCR S-TPG FLT 2.6X6
PM10	620 236 0836	PWB,MOTOR

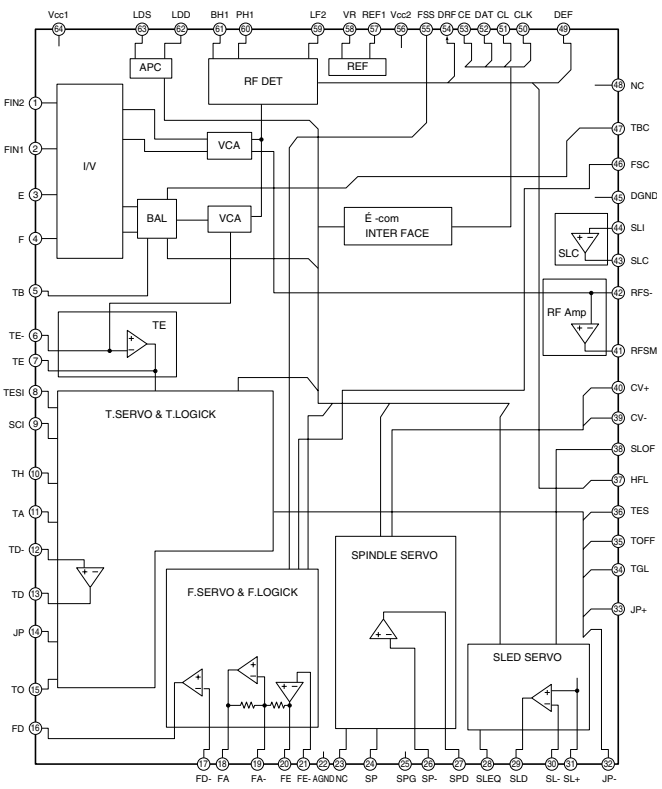
*N.S.P : Not supplied as service parts.

IC BLOCK DIAGRAM & DESCRIPTION

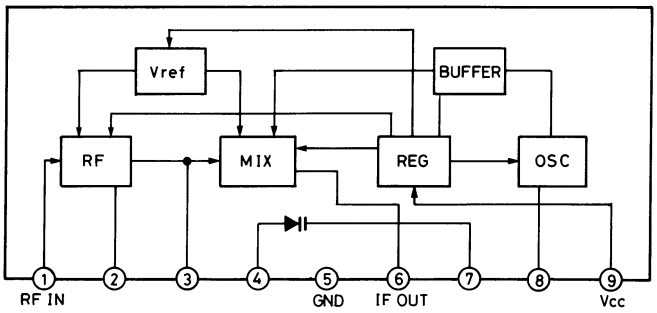
IC103 MM1469XH (CD Driver)



IC101 LA9241ML (Servo Signal Processor)



IC211 LA1186N-AUDIO (FM Front End)



IC BLOCK DIAGRAM & DESCRIPTION

IC101 LA9241ML (Servo Signal Processor)

No.	Pin Name	I/O	Function
1	FIN2	I	Connection Pin for Photo Diode of Pickup.
2	FIN1	I	FIN2 + FIN1 = RF, FIN2 - FIN1 = FE
3	E	I	Connection Pin for Photo Diode of Pickup.
4	F	I	E - F = TE
5	TB	I	Input Pin for DC ingredient of TE Signal.
6	TE-	I	Connection Pin for Gain Setting Resistor of TE Signal to TE Signal Pin.
7	TE	O	Output Pin for Tracking Error Signal.
8	TESI	I	Input Pin for Track Error Sense Comparator. TE Signal through Band Pass, and Inputted.
9	SCI	I	Input Pin for Shock Detection.
10	TH	I	Connection Pin for Time Constant Setting of Tracking Gain.
11	TA	O	Output Pin for TA Amplifier.
12	TD-	I	Connection Pin for Constant Tracking Phase Compensation, Consist of between TD and VR.
13	TD	I	Connection Pin for Constant of Tracking Phase Compensation.
14	JP	I	Connection Pin for Amplitude Setting of Tracking Jump (Kick Pulse) Signal.
15	TO	O	Output Pin for Tracking Control Signal.
16	FD	O	Output Pin for Focusing Control Signal.
17	FD-	I	Connection Pin for Constant of Focusing Phase Compensation, Consist of between FD and FA.
18	FA+	I	Connection Pin for Constant of Focusing Phase Compensation, Consist of between FD- and FA-.
19	FA-	I	Connection Pin for Constant of Focusing Phase Compensation, Consist of between FA and FE.
20	FE	O	Output Pin for Focusing Error Signal.
21	FE-	I	Connection Pin for Gain Setting Resistor of FE Signal to FE Signal Pin.
22	AGND	-	Ground for Analog Signal.
23	NC	-	No Connect
24	SP	O	Output Pin for Single End of Input Signal of the CV+, CV- Pin.
25	SPG	I	Connection Pin for Gain Setting Resistor, when Spindle 12 cm Mode.
26	SP-	I	Connection Pin for Constant of Spindle Phase Compensation with SPD Pin.
27	SPD	O	Output Pin for Spindle Control Signal.
28	SLEQ	I	Connection Pin for Constant of Sled Phase Compensation.
29	SLD	O	Output Pin for Sled Control Signal.
30	SL-	I	Input Pin for Sled Signal from Micro Processor.
31	SL+	I	

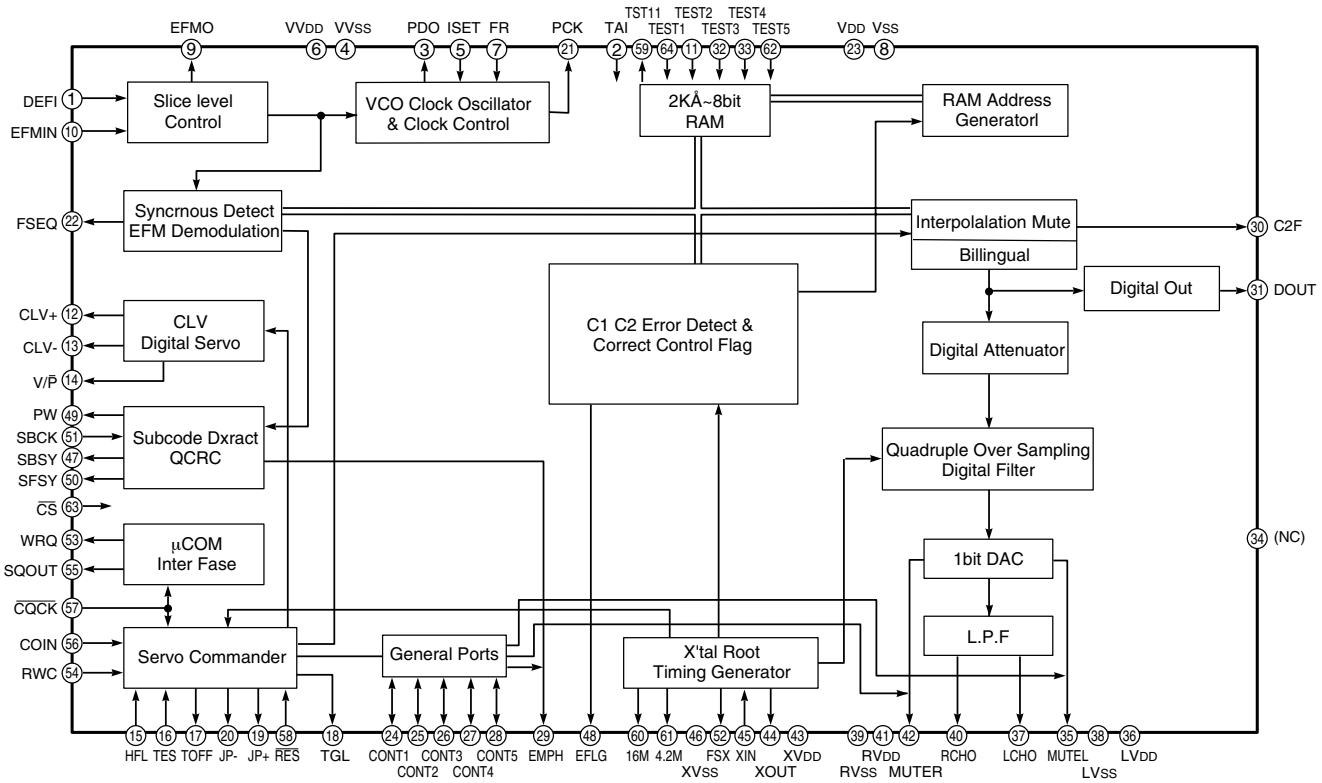
No.	Pin Name	I/O	Function
32	JP-	I	Input Pin for Tracking Jump Signal from Digital
33	JP+	I	Signal Processor.
			Digital Signal Processor. TGL = H : Gain Low
35	TOFF	I	Input Pin for Tracking Off Control Signal from Digital Signal Processor. TOFF = H : OFF
36	TES	O	Output Pin for Track Error Sense Signal to Digital Signal Processor.
37	HFL	I	High Frequency Level Signal Use Detection Main-Beam Position is on the pit or mirror.
38	SLOF	I	Input Pin for Sled Servo Off Control.
39	CV-	I	Input Pin for Constant Linear Velocity Error
40	CV+	I	Signal from Digital Signal Processor.
41	RFSM	O	Output Pin for RF Signal.
42	RFS-	I	Connection Pin for Gain Setting of RF and Constant Setting of 3T Compensation of the EFM Signal with RFSM Pin.
43	SLC	O	Slice Level Control Signal is Output Pin. It Control Level of Data-Slice by Digital Signal Processor of the RF Waveform.
44	SLI	I	Input Pin for Level Control of Data-Slice by Digital Signal Processor.
45	DGND	-	Ground for Digital Signal.
46	FSC	O	Output Pin for Focus Search Smooth Condenser
47	TBC	O	Connection Pin for Variable Range Setting of EF Balance.
48	N_	-	No Connect
49	DEF	O	Output Pin for Defect Detection of Disc.
50	CLK	I	Input Pin for Reference Clock Pulse. (4.23 MHz of Digital Signal Processor)
51	CL	I	Input Pin of Clock Pulse for Command from Micro Processor.
52	DAT	I	Input Pin of Data for Command from Micro Processor.
53	CE	I	Input Pin of Chip Enable for Command from Micro Processor.
54	DRF	O	Output Pin for Detect of RF Level.
55	FSS	I	Select Pin for Focus Search Mode
56	VCC2	-	VCC for Servo and Digital Root.
57	REFI	I	Bus Control Connection Pin for Reference Voltage.
58	VR	O	Output Pin for Reference Voltage.
59	LF2	I	Connection Pin for Time Constant Setting of Detect Detection of the Disc.
60	PH1	I	Capacitor Connection Pin for Peak-hold of RF Signal.
61	BH1	I	Capacitor Connection Pin for Bottom-hold of RF Signal.
62	LDD	O	Output Pin of APC (Automatic Power Control) Circuit.
63	LDS	I	Input Pin of APC (Automatic Power Control) Circuit.

IC BLOCK DIAGRAM & DESCRIPTION

IC102 LC78622NE (Digital Signal Processor)

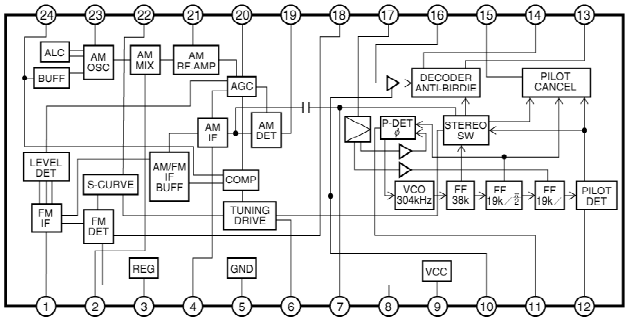
No.	Pin Name	I/O	Function
1	DEFI	I	Input terminal for detect signal of defect
2	TAI	I	Input terminal for test.
3	PDO	O	The phase comparison output terminal for external VCO control.
4	VVSS	-	Ground terminal for built-in VCO
5	ISET	I	Resistance connection terminal for electric current adjustment of PDO output.
6	VVDD	-	Built-in VCO power supply terminal.
7	FR	I	VCO frequency range adjustment.
8	VSS	-	Ground for Digital
9	EFMO	O	EFM signal output terminal for slice level control.
10	EFMIN	I	EFM signal input terminal for slice level control.
11	TEST2	I	TEST pin. Normal time is non connection.
12	CLV+	O	Output terminal for Disc motor control.
13	CLV-	O	Output terminal for Disc motor control.
14	V/P	O	Change of rough servo / phase control Rough servo : "H", Phase control : "L"
15	HFL	I	Input terminal of track search signal.
16	TES	I	Input terminal of tracking error signal.
17	TOFF	O	Output terminal of tracking off.
18	TGL	O	Output terminal for change of tracking gain.
19	JP+	O	Output terminal for tracking jump control.
20	JP-	O	Output terminal for tracking jump control.
21	PCK	O	Clock monitor output terminal for EFM data playback. (4.3218 MHz)
22	FSEQ	O	Output terminal for detect of SYNC signal.
23	DVDD	-	+5V
24	CONT1	I/O	This output can control at serial control from micro processor.
25	CONT2	I/O	
26	CONT3	I/O	
27	CONT4	I/O	
28	CONT5	I/O	
29	EMPH	O	Output terminal of de-emphasis monitor . "H" : de-emphasis
30	C2F	O	Output terminal of C2 flag
31	DOUT	O	Output terminal of digital out

No.	Pin Name	I/O	Function
32	TEST3	I	Test pin.
33	TEST4	I	Test pin.
34	NC	-	Non connection.
35	MUTEL	O	Mute output terminal for L-ch
36	LVDD	-	Power supply for L-ch
37	LCHO	O	Output terminal for L-ch
38	LVSS	-	GND for L-ch
39	RVSS	-	GND for R-ch
40	RCHO	O	Output terminal for R-ch
41	RVDD	-	Power supply for R-ch
42	MUTER	O	Mute output terminal for R-ch
43	XVDD	-	Power supply of crystal oscillation
44	XOUT	O	Connection terminal of crystal oscillation (16.9344MHz)
45	XIN	I	Connection terminal of crystal oscillation (16.9344MHz)
46	XVSS	-	GND of crystal oscillation
47	SBSY	O	Output terminal for synchronizing signal of sub-cord block
48	EFLG	O	Output terminal for correction monitor of C1, C2, Single and Double
49	PW	O	Output terminal for sub-cord of P, Q, R, S, T, U and W
50	SFSY	O	Output terminal for synchronizing signal of sub-cord frame
51	SBCK	I	Input terminal for readout clock of sub-cord
52	FSX	O	Output terminal of Synchronizing signal (7.35kHz)
53	WRQ	O	Output terminal for standby of sub-cord Q output
54	RWC	I	Input terminal of read / write control
55	SQOUT	O	Output terminal of sub-cord Q
56	COIN	I	Input terminal of command from micro processor
57	CQCK	I	Clock input for reading sub-cord from SQOUT
58	RES	I	Reset (turn on : L)
59	TST11	O	Test pin
60	16M	O	16.9344MHz
61	4.2M	O	4.2336MHz
62	TEST5	I	Test pin
63	CS	I	Chip select terminal
64	TEST1	I	Test pin

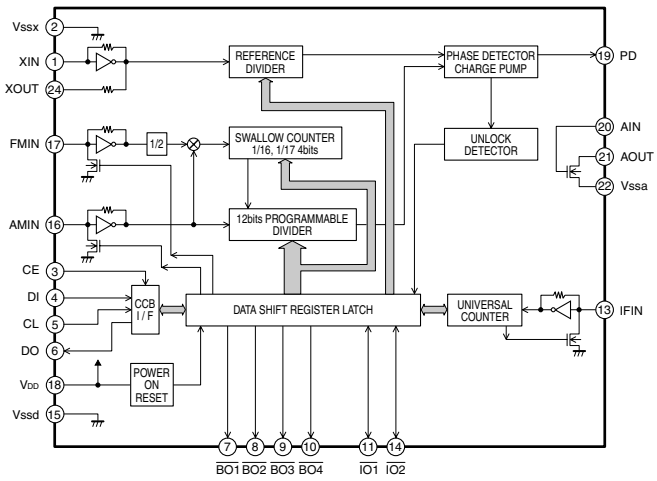


IC BLOCK DIAGRAM & DESCRIPTION

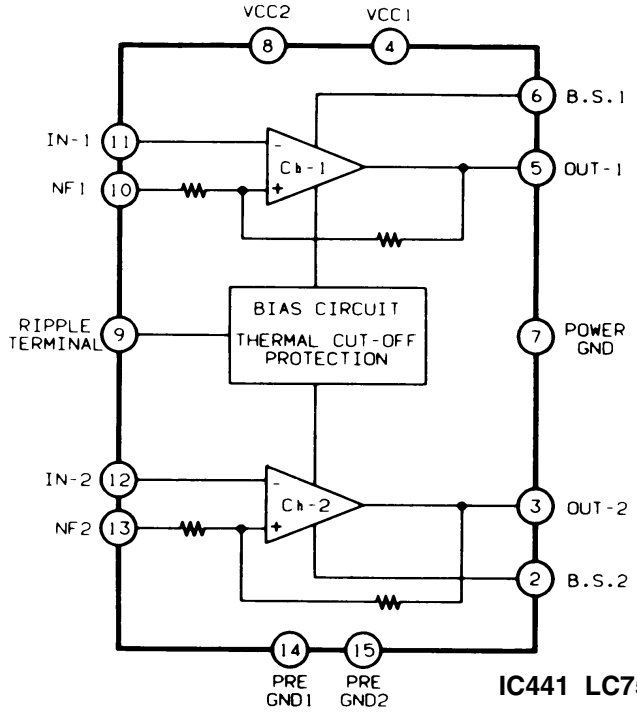
IC231 LA1844ML (Tuner System)



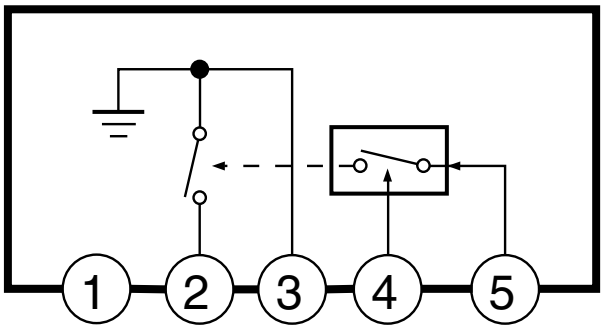
IC241 LC72121M-D (PII Synthesizer)



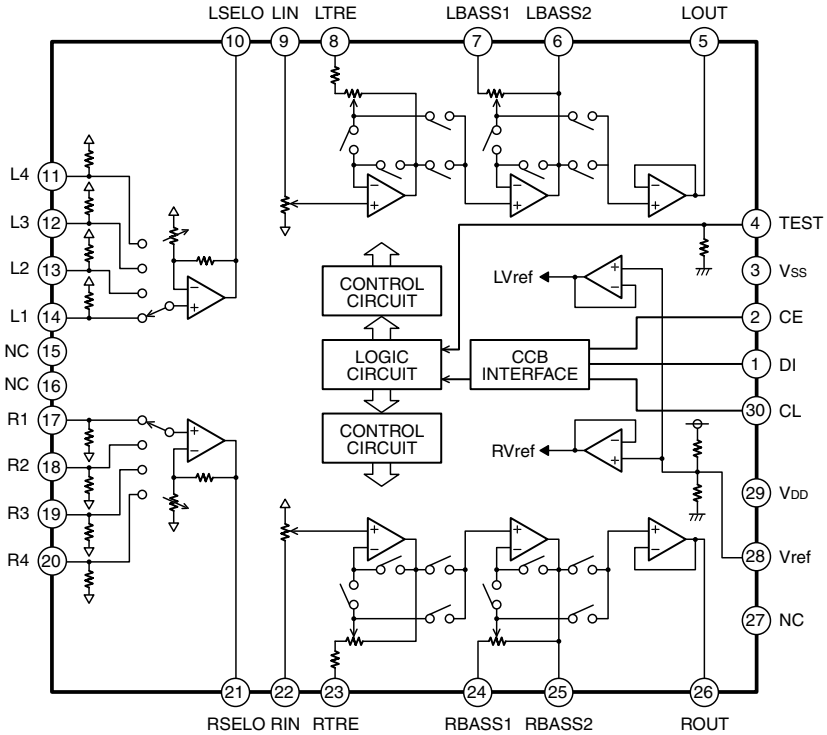
IC442 TA8229K (Power Amplifier)



IC443 BA7755A (Head Switch)

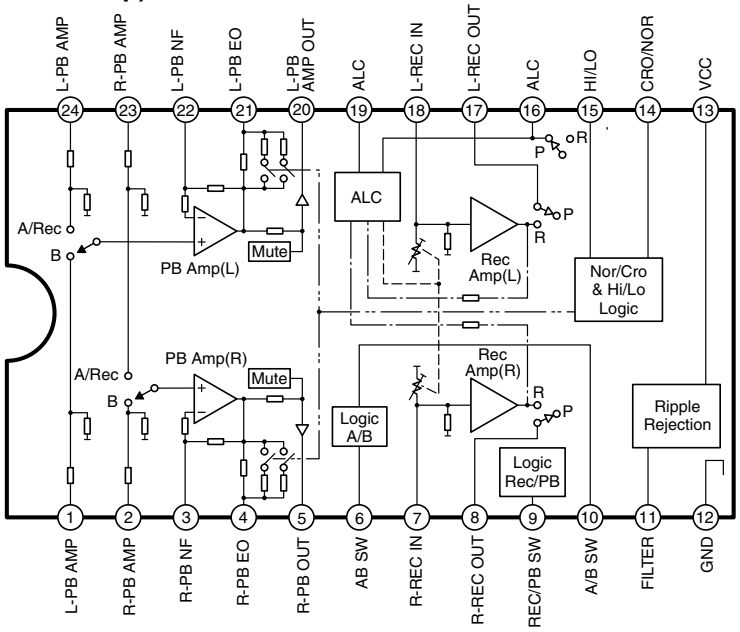


IC441 LC75342M (2 band equalizer)



IC BLOCK DIAGRAM & DESCRIPTION

IC440 AN7348K (Play/Rec Pre Amp)



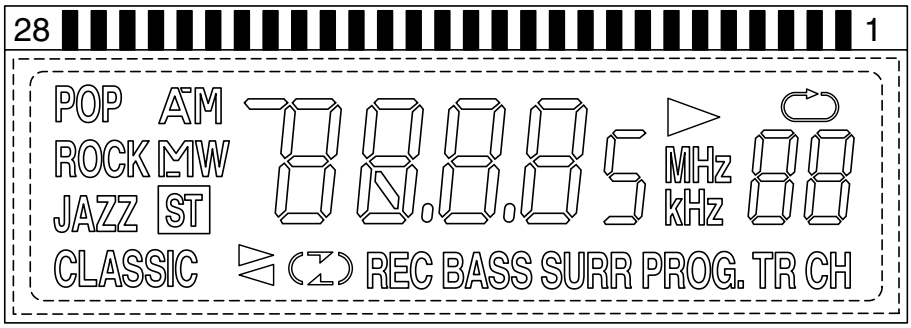
IC601 LC867232A-5Z21 (Micro Processor)

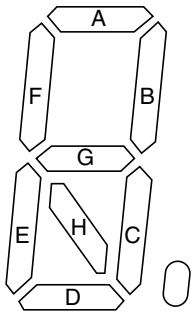
NO.	PIN NAME	NAME	I/O	DESCRIPTION
1	P06		O	
2	P07	DSP_RESET	O	DSP Reset Signal
3	P10/S00	COIN	O	CD_DSP Interface (Command, Data Output)
4	P11/SIO/SB0	SQOUT	I	CD_DSP Interface (SubQ Data Input)
5	P12/SCK0	CQCK	O	CD_DSP Interface (Clock)
6	P13/S01			
7	P14/SII/SB1	CLK_SHIFT	O	Shift Control for Micon Oscillation Frequency
8	P15/SCK1	RWC	O	CD_DSP Interface (Command, Latch Output)
9	P16/BUZ	JOG +	I	Jog Dial +
10	P17/PWM0	JPG -	I	Jog Dial -
11	P70/INT0	DRF	I	DRF Signal Input
12	RES	RESET		Reset Switch
13	XT1/P74		I	
14	XT2/P75		I	
15	VSS1	VSS		Gnd
16	CF1	CF1		Main Clock OSC
17	CF2	CF2		Main Clock OSC
18	VDD1	VDD		Positive Power Supply Pin
19	P80/AN0		I	
20	P81/AN1	KEY1	A/D	Key In
21	P82/AN2	KEY2	A/D	Key In
22	P83/AN3	DECK_SEL	I	One Way / Recerse Mecha Select (Low; One Way Mecha)
23	P84/AN4	LID SW	I	Top Lid Switch
24	P85/AN5	LIMIT_SW	I	Limit Switch
25	P86/AN6	C2F	I	DSP C2F Input
26	P87/AN7		I	
27	P71/INT1	WRQ	I	CD DSP Interface(Sub Q Request)
28	P72/INT2/TOIN	AC SENSE	I	Detection for Power Failure / Processor Power Check Input
29	P73/INT2/TOIN	IR	I	Remotecontrol Input
30	S0/PA0		I	
31	S1/PA1	G_REVS	I	Failure Record SW(Tape AB side)Input
32	S2/PA2	G_FWD	I	Failure Record SW(Tape B side)Input
33	S3/PA3	PACK	I	Tape Park Check Input
34	S4/PA4	TAPE_INI	I	Tape Deck Initialize
35	S5/PA5	REEL	I	Real Rotor Signal Input
36	S6/PA6	TAPE PLAY PL	O	Tape Play Plunger Output
37	S7/PA7	MOTOR	O	Tape Motor Output
38	S8/PA8	BEAT	O	Beat Cancel Control
39	S9/PB1	R MUTE	O	Tape Recording Mute
40	S10/PB2	OSC	O	Control for Oscillation of Tape On/Off
41	S11/PB3	SURROUND	O	Surround Output
42	S12/PB4		O	
43	S13/PB5		O	
44	S14/PB6		O	
45	S15/PB7		O	
46	S16/PC0		O	
47	S17/PC1		O	
48	S18/PC2		O	
49	S19/PC3		O	

NO.	PIN NAME	NAME	I/O	DESCRIPTION
50	S19/PC4		O	
51	S21/PC5		O	
52	S22/PC6		O	
53	S23/PC7		O	LCD Pin No28
54	S24/PD0		O	LCD Pin No27
55	S25/PD1		O	LCD Pin No26
56	VDD2	VDD	O	Vdd
57	VSS2	VSS	O	Gnd
58	S26/PD2		O	LCD Pin No25
59	S27/PD3		O	LCD Pin No24
60	S28/PD4		O	LCD Pin No23
61	S29/PD5		O	LCD Pin No22
62	S30/PD6		O	LCD Pin No21
63	S31/PD7		O	LCD Pin No20
64	S32/PE0		O	LCD Pin No19
65	S33/PE1		O	LCD Pin No18
66	S34/PE2		O	LCD Pin No17
67	S35/PE3		O	LCD Pin No16
68	S36/PE4		O	LCD Pin No15
69	S37/PE5		O	LCD Pin No14
70	S38/PE6		O	LCD Pin No13
71	S39/PE7		O	LCD Pin No12
72	S40/PF0		O	LCD Pin No11
73	S41/PF1		O	LCD Pin No10
74	S42/PF2		O	LCD Pin No9
75	S43/PF3		O	LCD Pin No8
76	S44/PF4		O	LCD Pin No7
77	S45/PF5		O	LCD Pin No6
78	S46/PF6		O	LCD Pin No5
79	S47/PF7		O	LCD Pin No4
80	V3/PL6			
81	V2/PL5			
82	V1/PL4			
83	COM0/PL0	LCD COM1	O	LCD COM1 (LCD Panel Pin3)
84	COM1/PL1	LCD COM2	O	LCD COM2 (LCD Panel Pin2)
85	COM2/PL2	LCD COM3	O	LCD COM3 (LCD Panel Pin1)
86	COM4/PL3			
87	P30	D_CLK	O	Tuner / Volume FUNC IC Serial Clock Output
88	P31	TU_DUT	O	Tuner IC Serial Data Output
89	VSS3	VSS		Gnd
90	VDD3	VDD		Positive Power Supply Pin
91	P32	VF_DO	O	VOL_FUNC IC Serial Data Output
92	P33	VF_CE	O	VOL_FUNC IC Serial Latch Output
93	P34	TU_CE	O	TU IC Serial Latch Output
94	P35	TU_DI	I	TU IC Serial Data Input
95	P00		O	
96	P01		O	
97	P02		O	
98	P03	PRE_MUTE	O	Pre Amp Mute Output
99	P04	MAIN_MUTE	O	Power Amp Mute
100	P05		O	

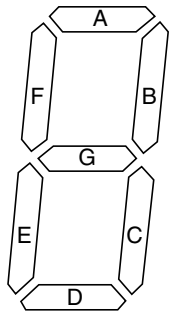
LCD DISPLAY DESCRIPTION

LCD60





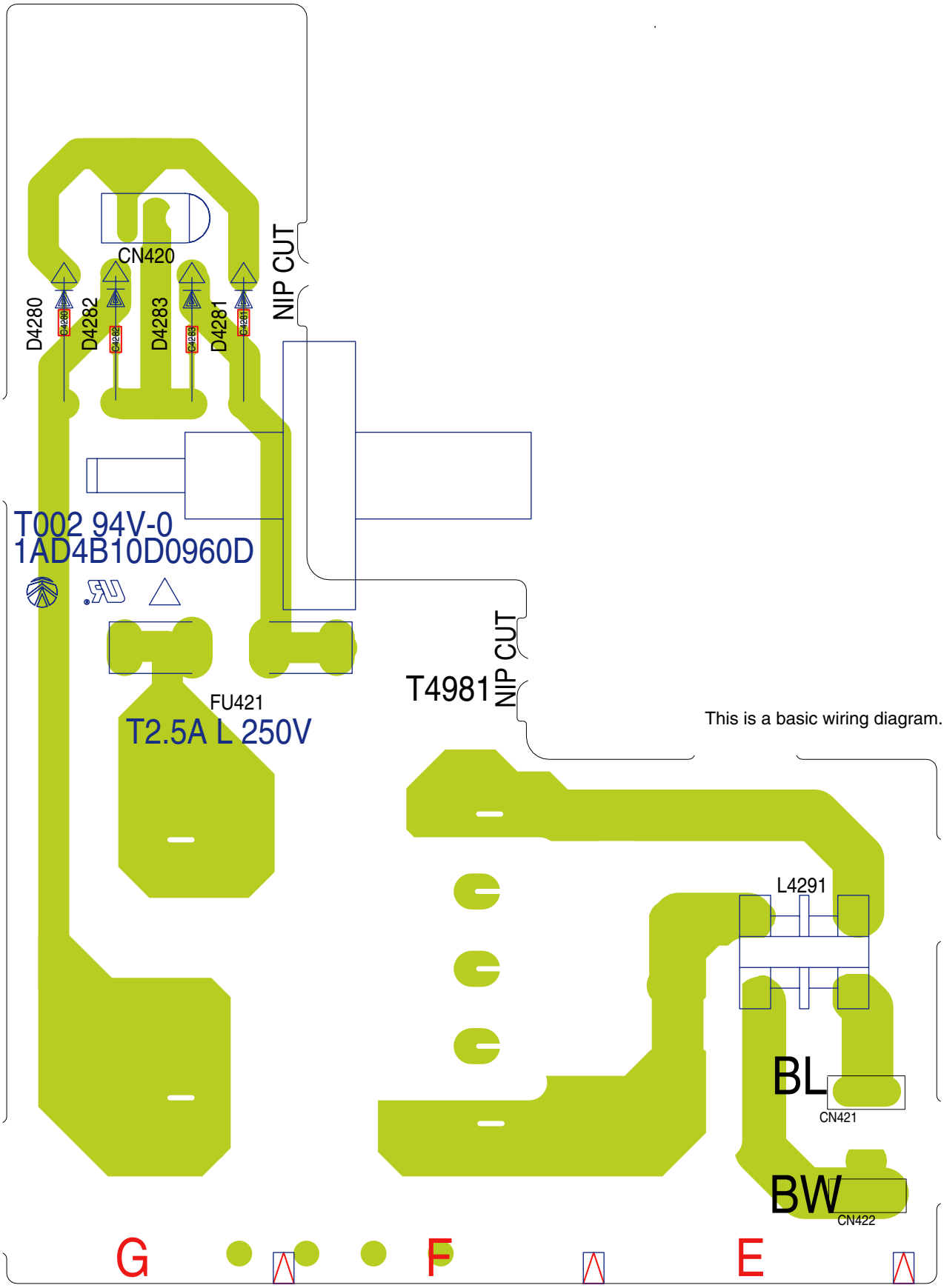
(DIGIT 2)

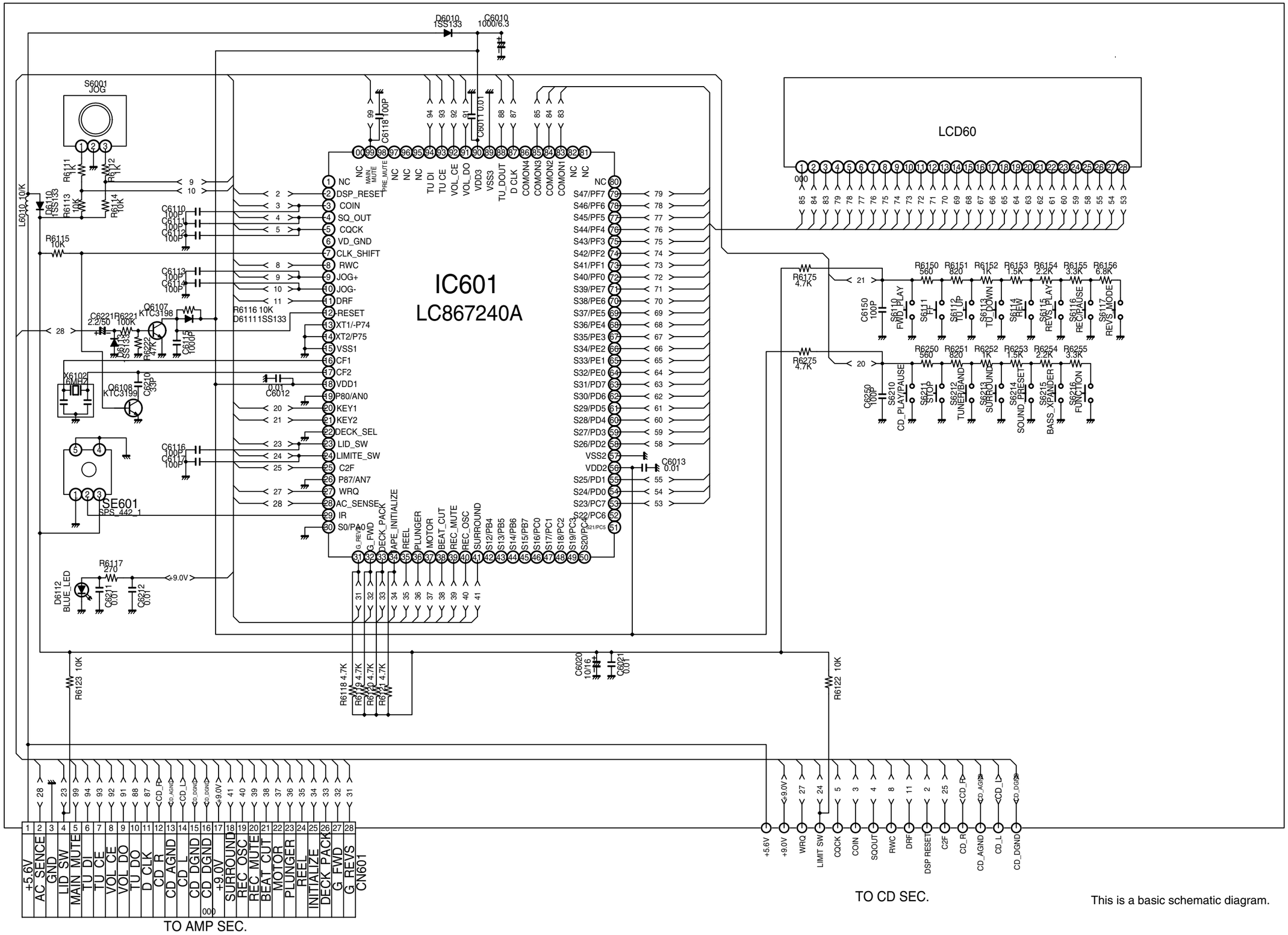


(DIGIT 1,3,4)

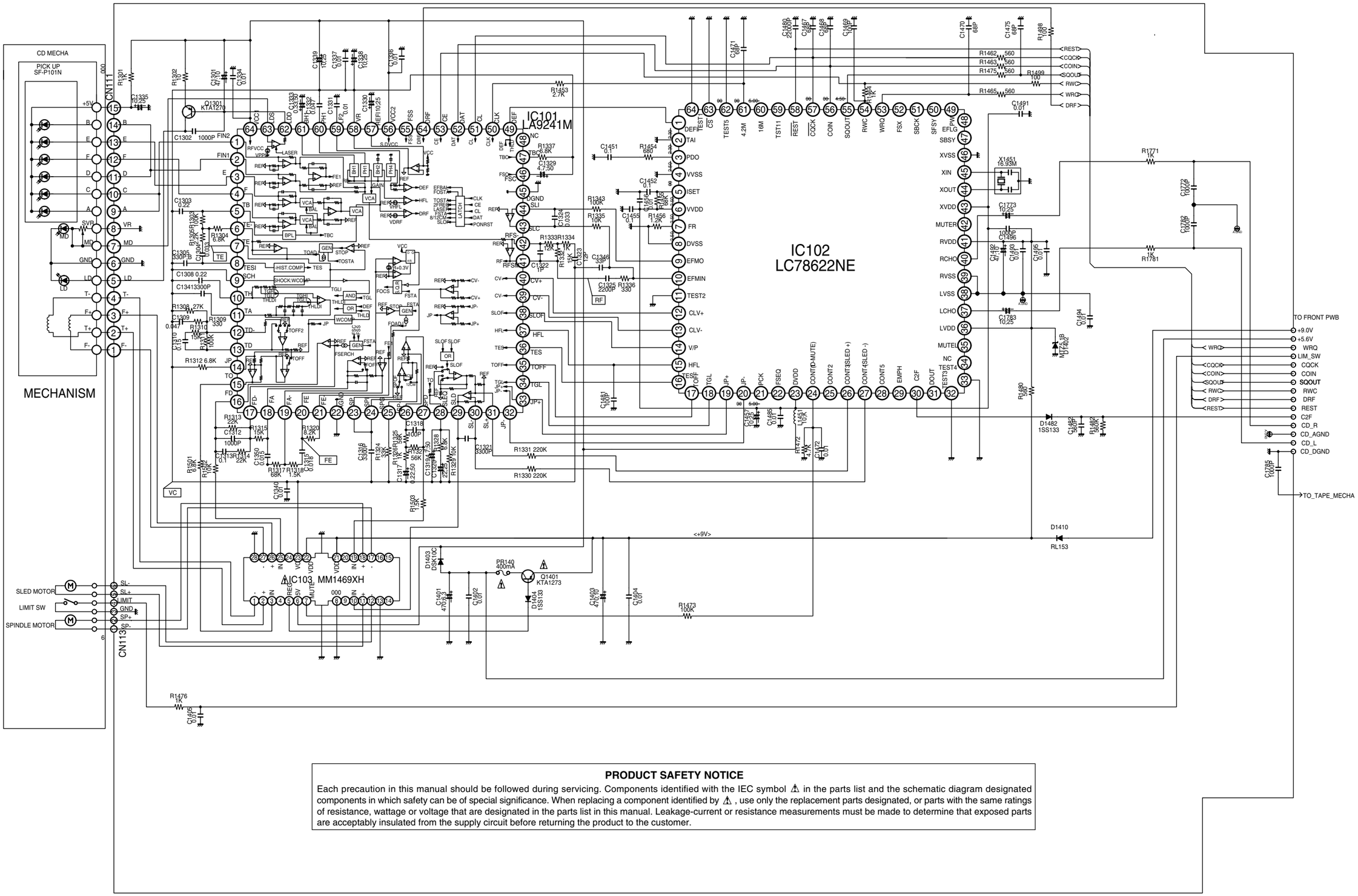
PAD NO.	IC NO.	COM1	COM2	COM3
1	C3	--	--	COM3
2	C2	--	COM2	--
3	C1	COM1	--	--
4	S1	7A	7F	7E
5	S2	7B	7G	7D
6	S3	T8	7C	CH
7	S4	6A	6F	6E
8	S5	6B	6G	6D
9	S6	JAZZ	6C	TR
10	S7	T1	MHZ	kHZ
11	S8	5	PROG.	REC
12	S9	T5	T6	ST
13	S10	4A	4F	4E
14	S11	4B	4G	4D
15	S12	4h	4C	SURR
16	S13	3A	3F	3E
17	S14	3B	3G	3D
18	S15	3h	3C	BASS
19	S16	2A	2F	2E
20	S17	2B	2G	2D
21	S18	2h	2C	CLASSIC
22	S19	REV PLAY	T9	FWD PLAY
23	S20	1A	1F	1E
24	S21	1B	1G	1D
25	S22	1h	1C	T4
26	S23	T2	--	T3
27	S24	POP	T10	--
28	S25	ROCK	T11	T7

WIRING DIAGRAM (POWER TRANSFORMER)





This is a basic schematic diagram.

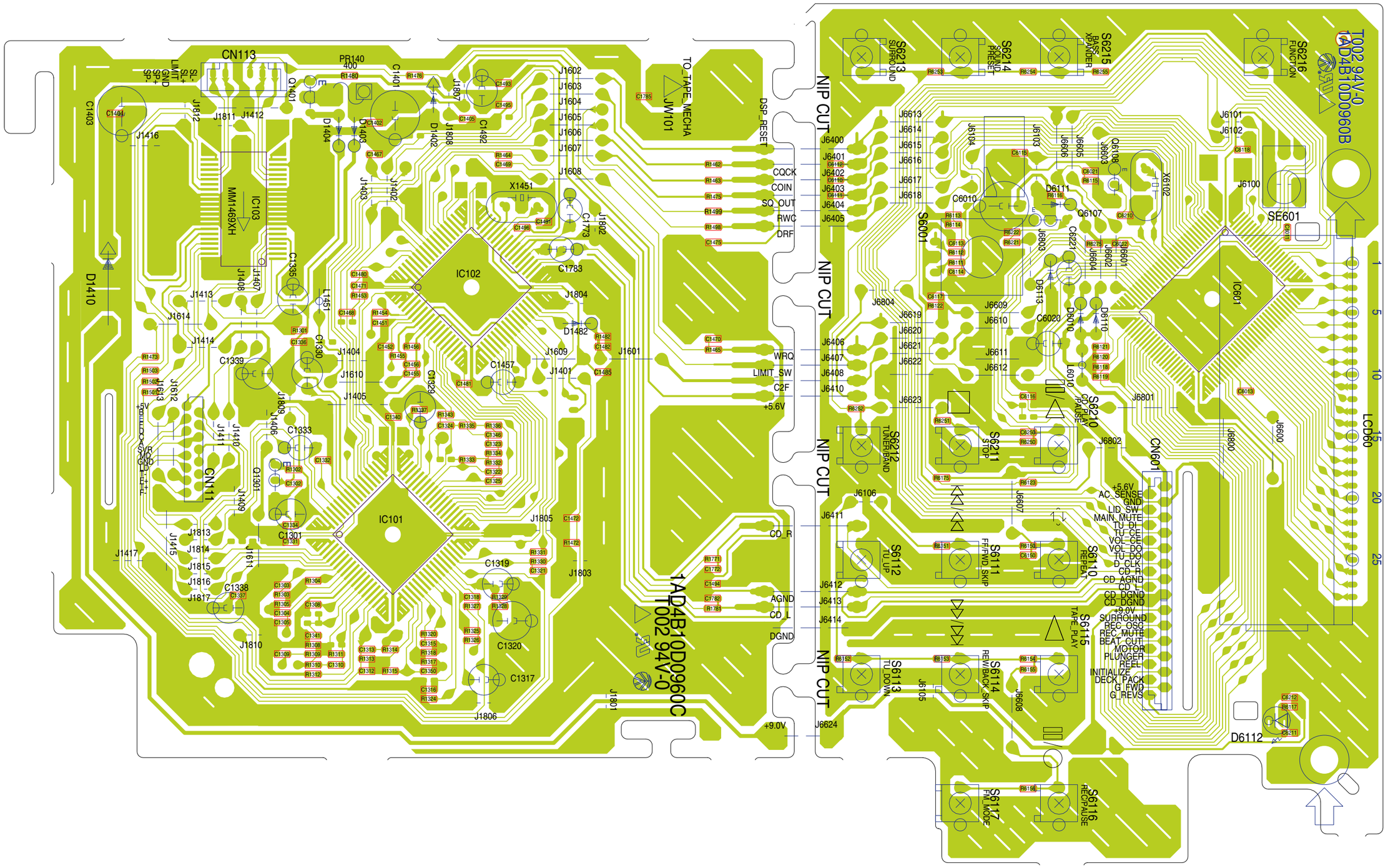


PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designated components in which safety can be of special significance. When replacing a component identified by ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

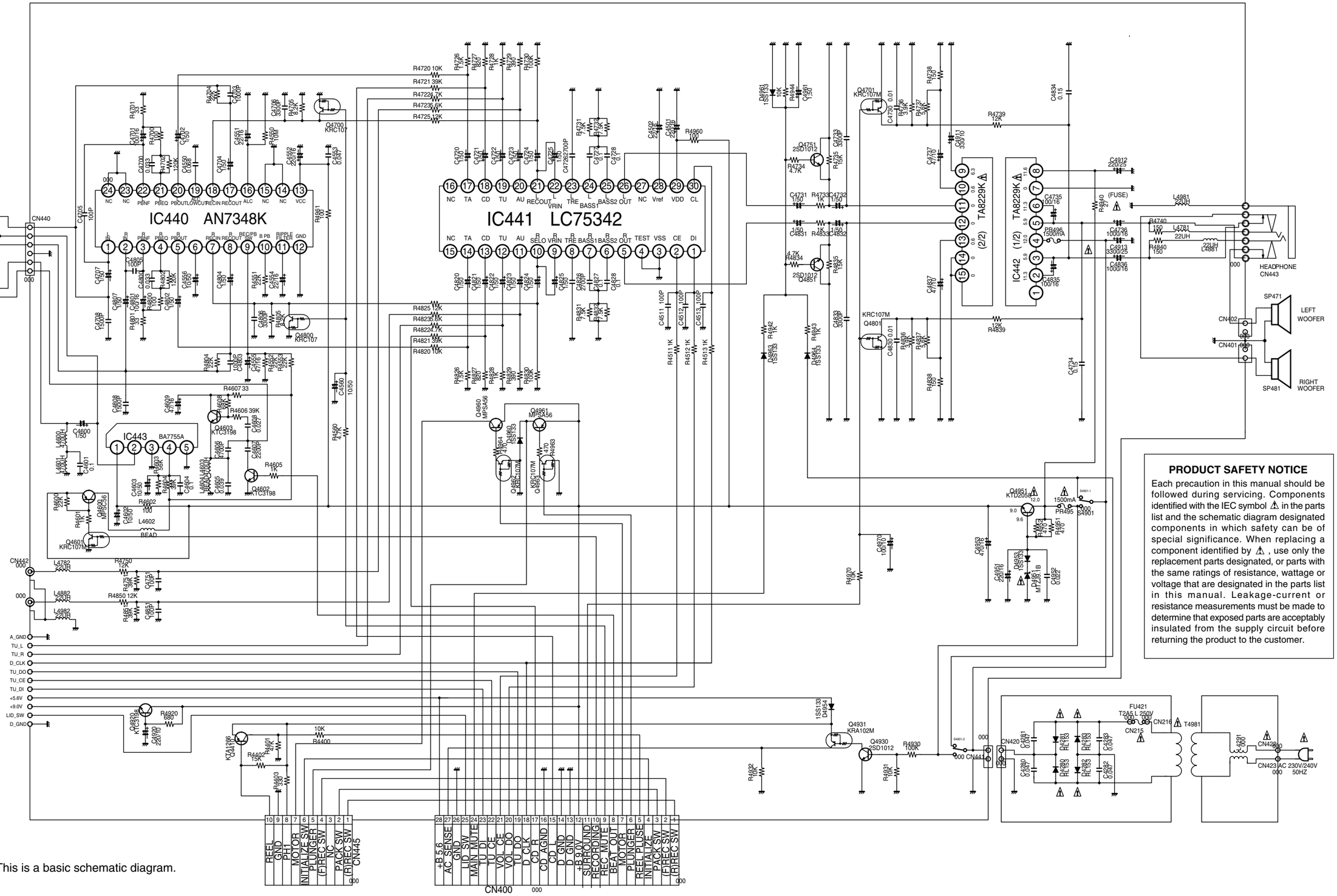
This is a basic schematic diagram.

WIRING DIAGRAM (FRONT & CD)



This is a basic wiring diagram.

SCHEMATIC DIAGRAM (AMPLIFIER)

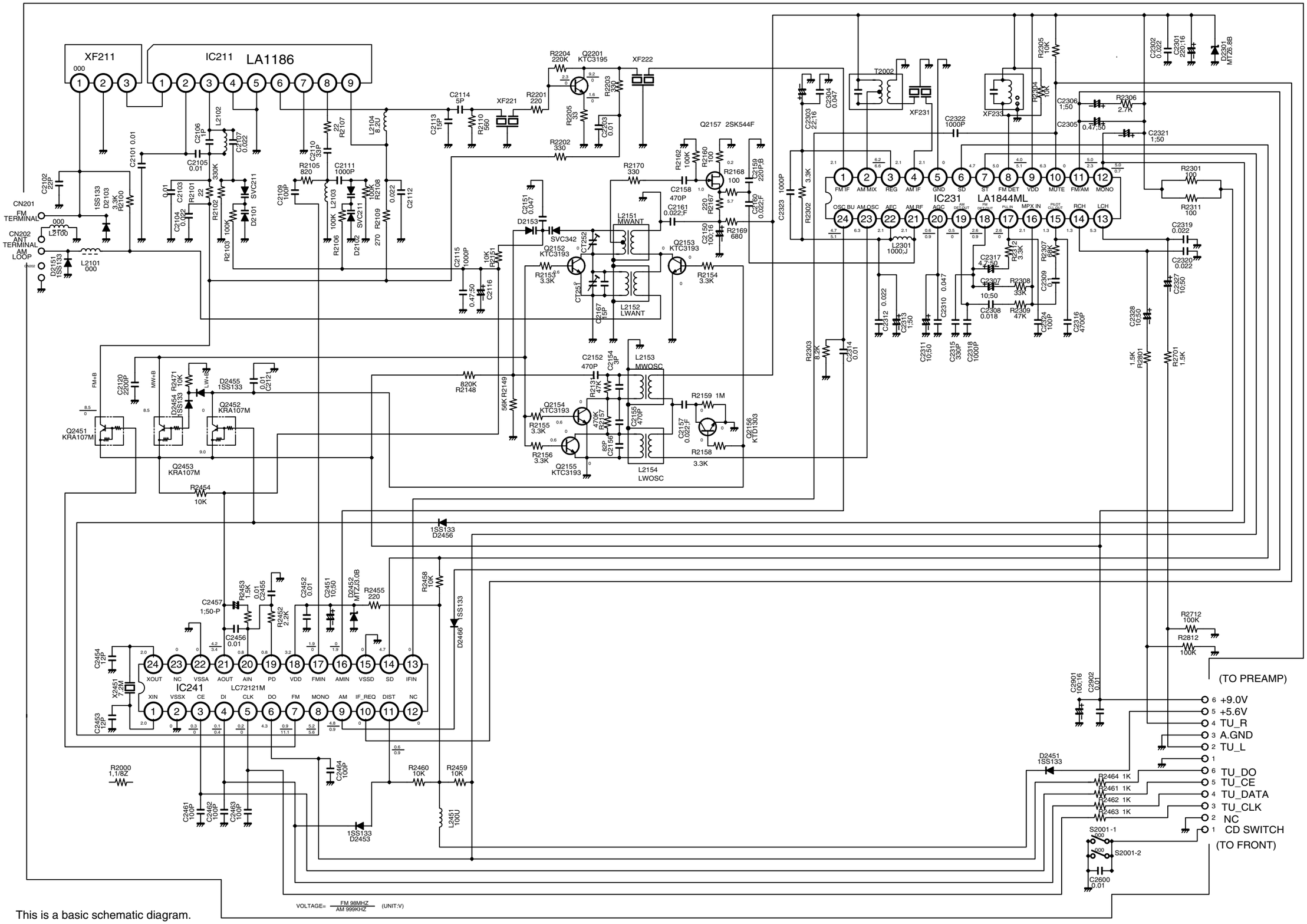


This is a basic schematic diagram.

PRODUCT SAFETY NOTICE

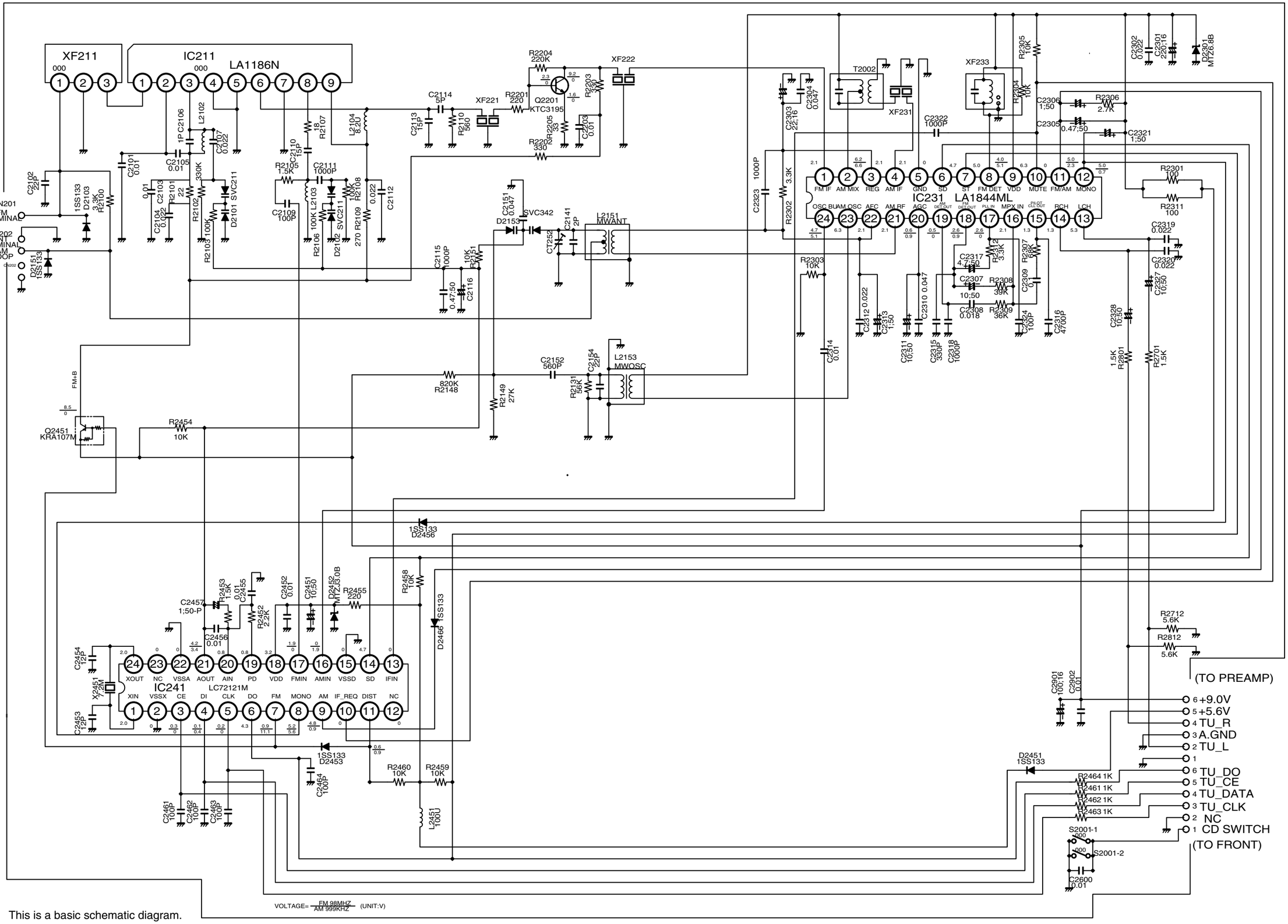
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designated components in which safety can be of special significance. When replacing a component identified by ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

SCHEMATIC DIAGRAM (TUNER for UK)

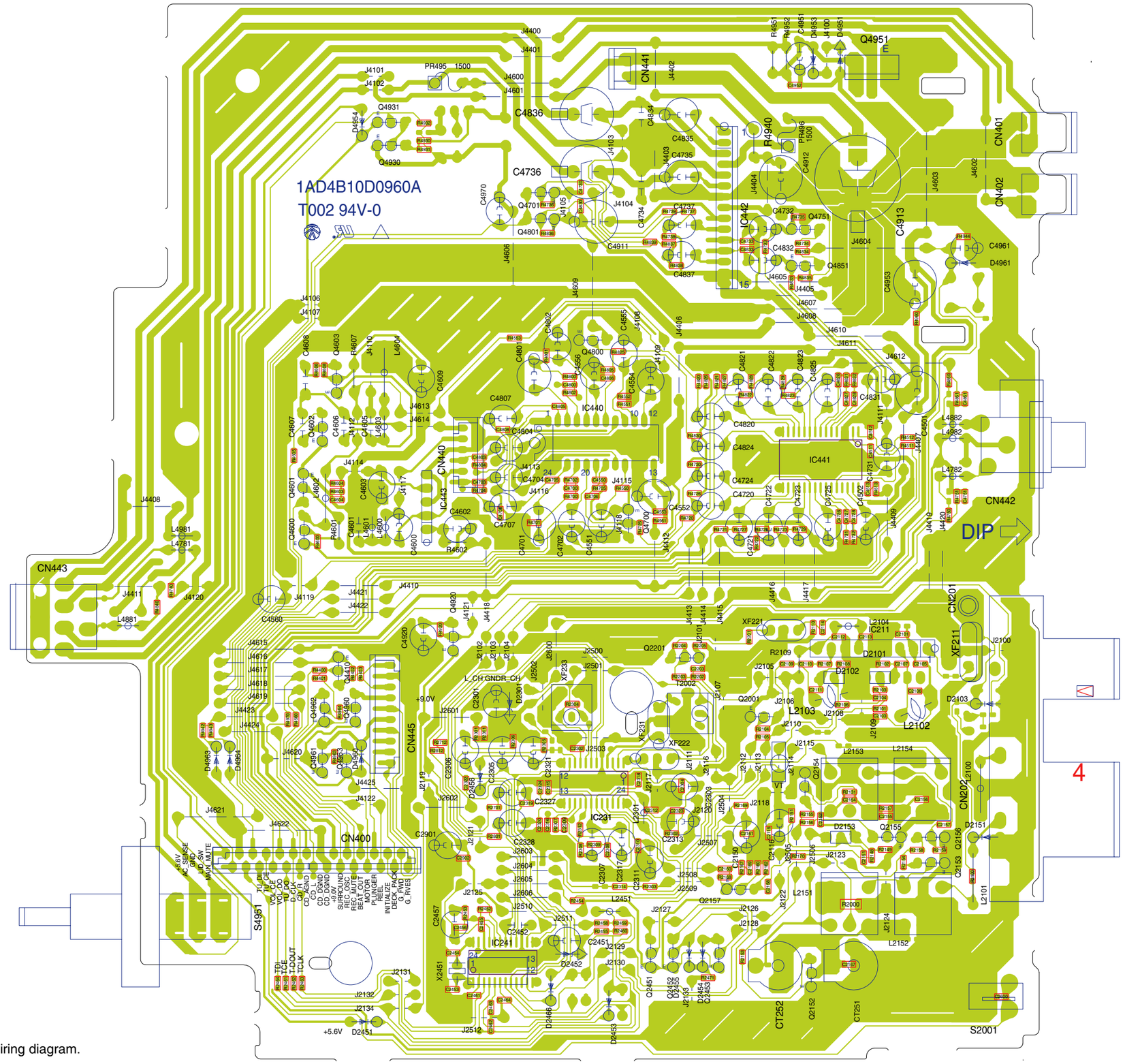


This is a basic schematic diagram.

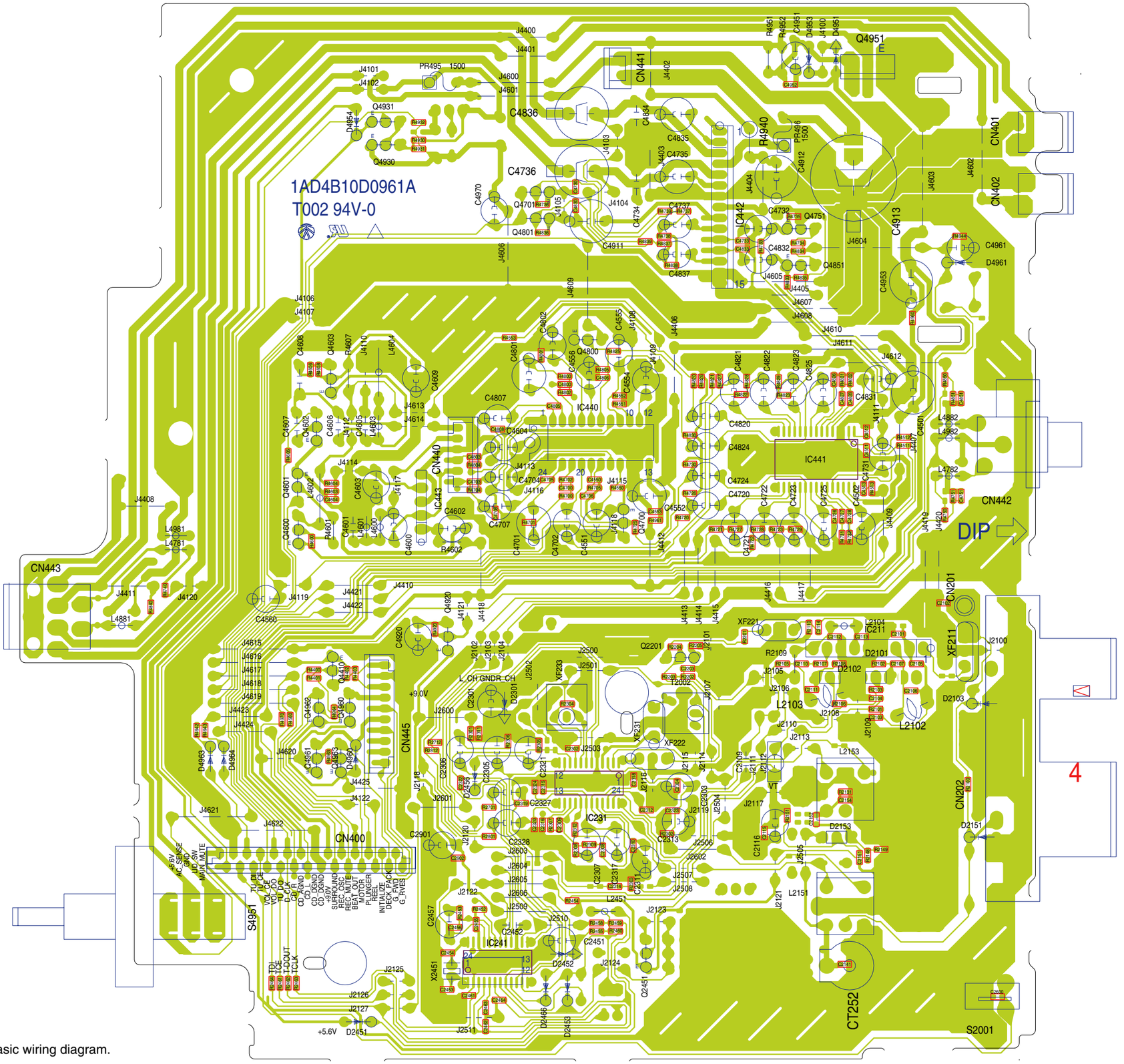
SCHEMATIC DIAGRAM (TUNER for SP)



This is a basic schematic diagram.

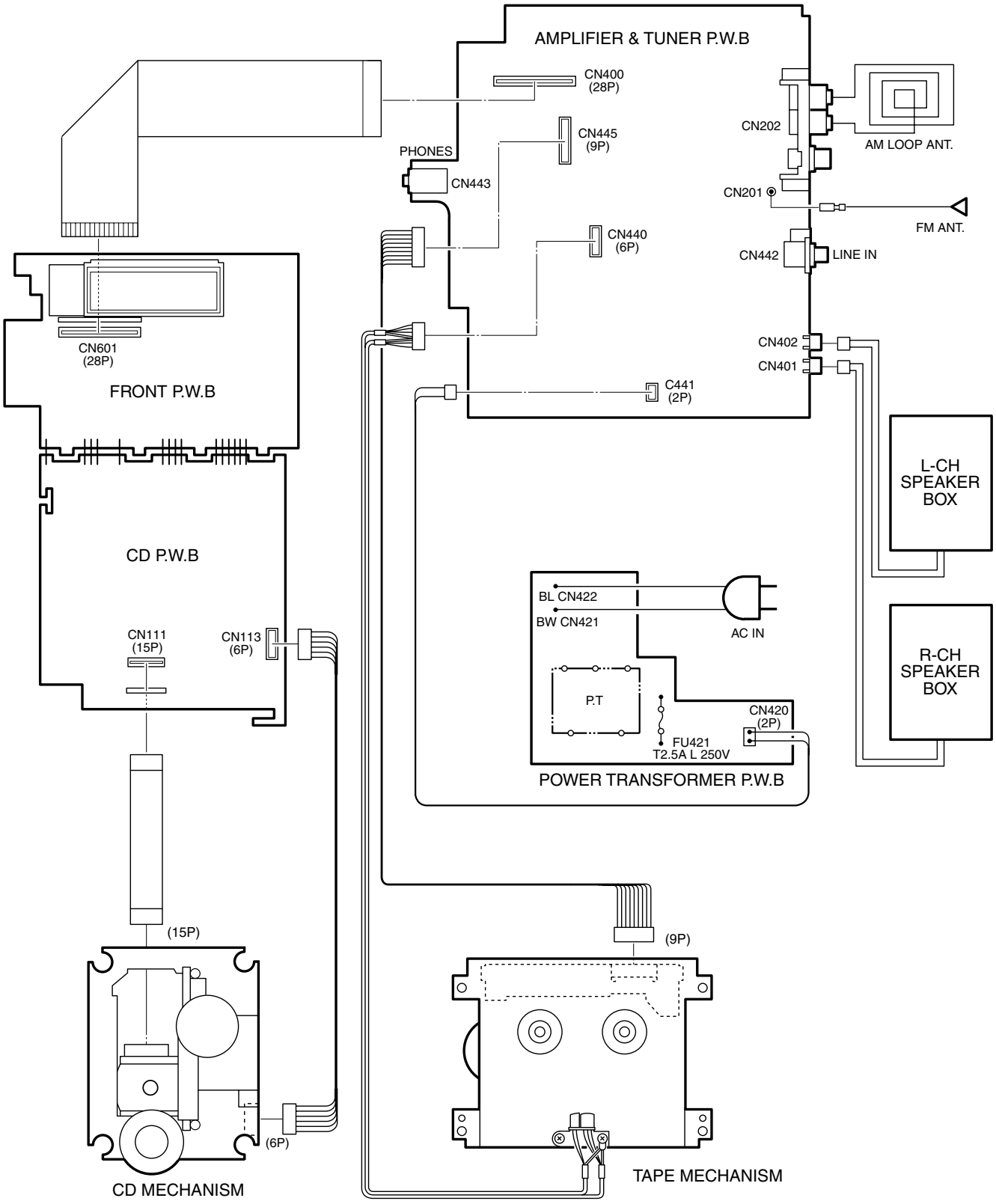


This is a basic wiring diagram.



This is a basic wiring diagram.

WIRING CONNECTION



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